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THE Journal OF THE IOWA STATE MEDICAL SOCIETY



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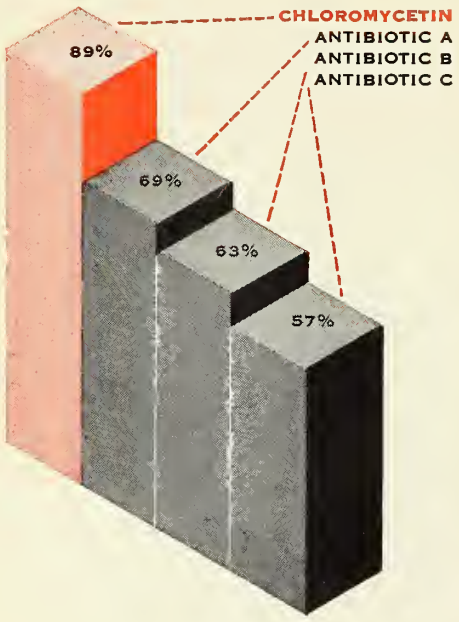
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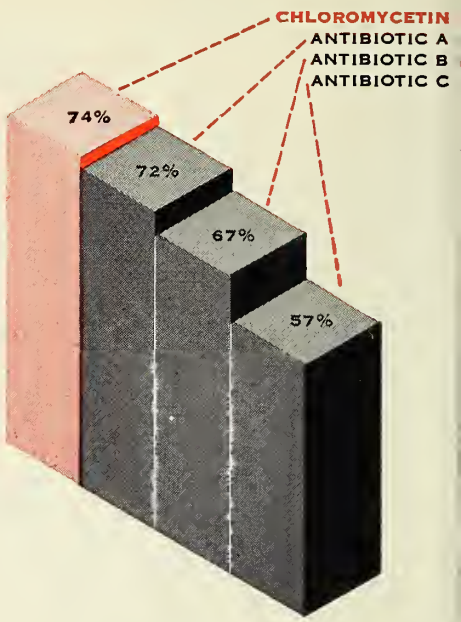
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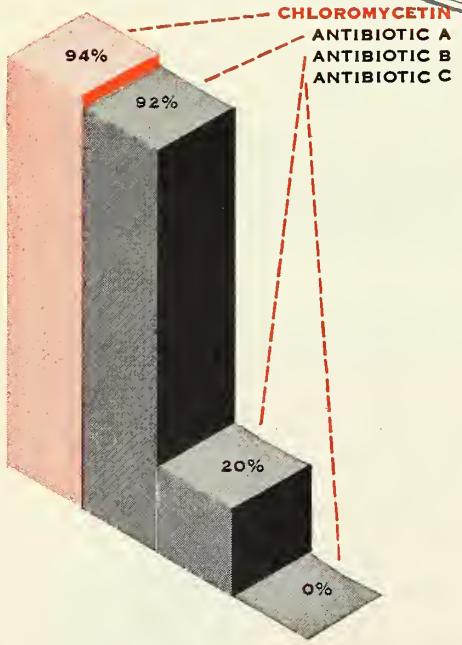


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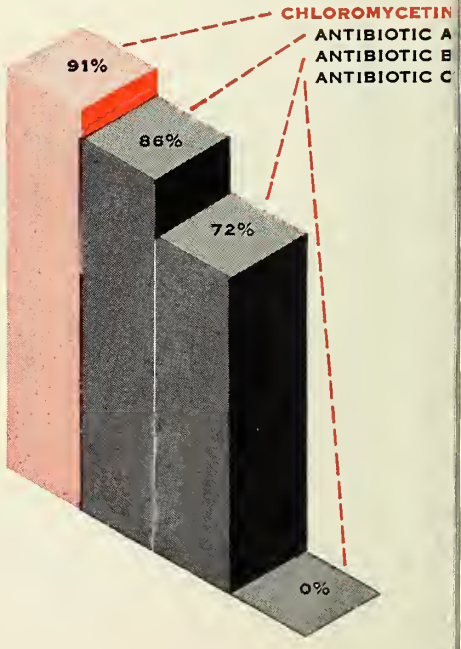


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God Helps Them Who Help Themselves*

G. W. MURPHY, M.D.

ASHEVILLE, NORTH CAROLINA

THE MOST COMPELLING and the most beneficent influence in human affairs is the love of freedom. Medicine, like religion, can flourish only in an atmosphere of liberty for the individual. As I survey the last 25 years of medical history, I am dismayed at the way our continued policy of compromise and appeasement has permitted the constriction of the perimeter of private practice. We have been very busy trying to make medicine popular, when we should have been struggling to preserve its independence.

With every fiber of my being, I believe that the unlimited choice of physician, the free selection of patient, the unqualified responsibility of physician to patient, the unhampered exercise of professional judgment and the direct reward for individual initiative form the only possible basis for the acceptable medical care of free men.

By invitation, in May, 1956, I addressed the Medical Society of the State of North Carolina on the influences which are so rapidly destroying the private practice of medicine. My address was unusual only in that I put into words what thousands of American physicians were thinking. Because of its timeliness, it has been rather widely disseminated. My theme is unchanged. What I shall say is no more than the 1957 model of that address, and I shall quote freely from the original.

Those who are about to destroy our system of practice fall into a number of diversified groups, but they have at least two things in common. As organizations, they are not natural persons. Therefore they have no souls. They have no consciences. They cannot exercise professional judgment, and they are impersonally ruthless. Secondly, all of them are third parties who seek to interpose themselves between the doctor and his patient.

There is nothing vindictive or punitive in their attitude toward medicine. Unfortunately we are caught in the middle, for we stand in the way of their expanding programs. For purposes of discussion we may divide them into four groups: government, industry (management and workers), insurance carriers and hospitals. I estimate that in more than 50 per cent of our practice today, the *where, when, how* and *for how much* are controlled to some degree by third-party lay organizations. Governmental agencies, industrial organizations either of owners or employees, insurance companies (including Blue Cross) and hospitals have their representatives sit around the bargaining table and use our services as pawns to further their own ends, and we have little to say about it. As our priceless prerogatives are stripped from us one by one, we stand stupidly by and fail to use the one weapon which is already in our hands—power of organization. Unions have demanded and the courts have given them the right to use the privilege of granting or withdrawing membership in their organizations as a means of controlling the conditions of gainful employment. Surely no court and no union would have the temerity to deny a like privilege to Medicine.

GOVERNMENT

The Veterans Administration provides hospitalization and medical care for both service- and non-service-connected disabilities. It is by no means impossible that within the near future dependents of veterans will also be included.

The vast Social Security System—especially now that House Resolution 7225 has been made into law—has dealt a devastating blow to professional freedom.

In his recent campaign, Mr. Adlai Stevenson advocated that the federal government formulate a plan under which to guarantee complete hospital and medical care for the entire population.

Medical and hospital care for federal employees and their dependents, and for members of the Armed Forces and their dependents is now an established fact.

The use of federal funds for medical schools, hospitals and clinics has increased to an alarming degree, and the end is not in sight. The North Carolina Medical Care Commission, which dispenses Hill-Burton funds, dominates the hospitals and controls the practice of medicine to a considerable degree in my own state.

The State of North Carolina maintains a large university clinic and hospital which accepts patients of all classes. To the best of my knowledge, professional fees are then diverted to some degree into university funds. Thus, physicians are employed by the state, given the prestige of a connection with the university, and maintained in active competition with private practitioners.

Federal and state departments of health are encroaching ever further on the private practice of medicine. As an indication of the trend, I shall quote two paragraphs from a report which the

* The title is a quotation from Benjamin Franklin. This, with some abbreviations, is the paper which Dr. Murphy read at the Iowa State Medical Society's Fourth Annual Conference of County Society Presidents and Secretaries, on October 21, 1956, in Des Moines. As he explains, it is a revised version of an address, "A Small Leak Will Sink a Great Ship," that he gave to the May 1, 1956, annual meeting of the Medical Society of the State of North Carolina. In its original form, it was published in the NORTH CAROLINA MEDICAL JOURNAL, endorsed and praised in one of Dr. George Lull's circular letters to the members of the AMA, and very widely read throughout the United States.

North Carolina health officer made to our State Medical Society in 1955:

"We are now at about the same stage of medical knowledge regarding these chronic, non-communicable disorders at which our predecessors found themselves when joint efforts of private practice and public health began to be coordinated against communicable diseases. We are afforded the opportunity to proceed humanely and cooperatively, as was done so successfully against the infectious diseases.

"The work of the private practitioner will be just as ethical and much more satisfying as all chronic disorders are promptly diagnosed and control efforts are made more effective. Our state is in a strategic position to lead the way in combatting chronic, non-communicable disorders and accidents, just as private practitioners and the public health team joined hands to pioneer in communicable disease control."

Thus, state health departments turn their eyes toward control of the field of accidents and chronic disease. The United States Public Health Service now proposes to bring industrial medicine within its orbit of control.

INDUSTRY

Industries over the nation are building hospitals and organizing medical services for their employees and their dependents—closed panels which are staffed by salaried physicians.

The Kaiser Medical Service Plan on the West Coast and a like establishment which has been proposed by the Atlantic Coast Line Railroad in North Carolina are typical examples. Employee organizations in certain fields are likewise establishing hospital and service plans for members and their dependents, as illustrated by the operations of the United Mine Workers in 22 states, staffed by closed panels of salaried physicians. In a letter that he wrote to me, Dr. J. S. DeTar, president of the American Academy of General Practice, reported, "In Michigan our Blue Cross-Blue Shield plans are now receiving a terrific amount of criticism. Although we insure over 50 per cent of the people in the state of Michigan, the rate increases necessitated by the increase in the cost of hospitalization have brought the plan under very concentrated attack. . . . In this area, the C.I.O. plans very definitely to organize hospitals of the Kaiser type, with completely salaried staffs. This is going to be a long fight and a tough one."

INSURANCE

The insurance companies are motivated by a desire for profit, rather than by ideological considerations. They are not driven by a consuming thirst for power. Instead, they enter the picture most significantly as bargainers when their interests become confluent with those of other third-party agencies.

HOSPITALS

It is our concept that hospitals are maintained to assist the physician in caring for his patients, but a startling philosophy is rapidly developing among hospital administrators that the hospital is an end within itself—that the hospital *treats* the patient, and therefore that it should, at a profit, supply services through the medium of salaried physicians.

In my address before the Medical Society of the State of North Carolina, I said, "The American Hospital Association is adopting the concept that the hospital should be the purveyor of all health services in the community, and that all who render services, including physicians, should be its salaried employees."

The leaders of the American Hospital Association have assured me most emphatically that my projection of the ultimate aims of that organization was incorrect, but you Iowans, when you consider the tenacity with which your hospitals cling to and seek to expand their practice of employing physicians on salary and under other profit-making arrangements, are in an excellent position to form your own opinions.

I shall give you some illustrations which I believe will convince you beyond reasonable doubt that the private practice of medicine is in imminent danger of losing its status as a profession and is being forced into the mold of a trade by hospitals as well as by other institutions and organizations. The physicians in North Carolina have been better able to preserve their freedom than have the doctors in many other states; yet there are North Carolina hospitals that hire physicians in order that the differences between fees collected and salaries paid may provide a source of income for the institutions.

One salaried surgeon discovered that without his knowledge his hospital was charging high fees for his services and making upward of $100,000 a year, net.

It has been reliably reported to me that the president of a large educational institution investigated the incomes of the medical staff of the affiliated private diagnostic clinic. He informed these physicians that they must surrender a portion of their earnings, not to the hospital, not to the medical school, but to the general college fund.

A North Carolina hospital passed and attempted to enforce a regulation requiring that the medical staff turn over to it from 10 to 50 per cent of moneys earned in private practice within the institution.

A North Carolina hospital tried to enforce a rule requiring physicians to purchase staff appointments at $500 each.

The board of directors of a North Carolina hospital recently adopted a rule that the professional staff, under penalty of expulsion and denial of hospital privileges, could accept no fees for services

rendered in the institution until the patient's hospital bills had been paid in full. The president of the local medical society accepted payment, in his office, from a patient before his hospital bill had been entirely satisfied, and the hospital administrator demanded that he turn over that private fee to him. Upon the physician's refusal, the board of trustees cited him for non-compliance with their regulation, and the doctor expects momentarily to be expelled from the staff and to be denied the right of treating patients in the institution.

Concerning this last incident, I am glad to inform you that the Medical Society of the State of North Carolina has pledged its unlimited moral, legal and financial support to the Robeson County Society in its fight, in and out of the courts. It also adopted a resolution to the effect that any of its members who participate in any such arrangement as the hospital administrator in this case had attempted to enforce will be expelled from the State Society, and will be referred to the Board of Medical Examiners for possible revocation of license.

In addressing the American Hospital Association in September, Dr. Dwight H. Murray, president of the AMA, said: "I would be less than frank if I did not say that the medical profession is concerned by, and vitally interested in, the attempt by certain hospitals, direct or indirect, to inject themselves—in our opinion improperly—into the practice of medicine." Dr. Murray went on to say that hospital control of medical practice cannot possibly serve the best interests of patients and will only destroy the freedom and independence of the physician in practicing the science and art of healing.

The most recent and the most direct attempt by hospitals to enter fully into the practice of medicine was a move by the Blue Cross service plan of Pittsburgh, serving most of western Pennsylvania, to offer both in-patient and out-patient medical, surgical and dental care. The announcement said, in part, "For the first time general coverage of out-patient care is to be undertaken through Blue Cross." The Allegheny County Medical Society commented, "When hospitals embark on a program of providing diagnostic services, then the hospitals clearly and unmistakably embark on the corporate practice of medicine; this is in violation of all state laws which clearly set forth the principle that the third party cannot practice medicine." The County Society furthermore stated its determination not to cooperate with this hospital-service plan.

As far back as 1953, Dr. Fred G. Carter, vice-president of St. Luke's Hospital, Cleveland, suggested that all who enter the field of health care—including public health workers, technicians, nurses and medical students—should have a common basic training in hospitals, then some academic instruction, and finally some additional hospital experience. Thus at least one administrator wishes the hospitals to control the education of physicians.

Dr. C. Rufus Rosen, executive director of the Hospital Council of Philadelphia, has written very favorably of the developing movement among physicians to occupy private offices belonging to hospitals. This seems quite innocent, but instead it is another tentacle reaching out to ensnare private practice.

Unless some drastic step is taken, it is inevitable that two or more lay agencies, such as industry and hospitals, will come together in a combination to try to subjugate American Medicine completely.

PHYSICIANS MUST ACT TOGETHER

I should like to offer a possible alternative to the course of appeasement which we have been following so disastrously. We live in a society which is largely controlled by tightly organized groups, and I submit to you the hypothesis that only an organized group can survive in it. In the eyes of the public we are—and I use the ugly word—a union. We bear the excoriation and censure which is often heaped upon unions, but we have had none of the advantages which come from union organization. Neither now nor in the future do I suggest that we ever refuse to give our best professional services to all the sick who need us. But I do suggest that we use the power of organization to control the social and economic circumstances under which our services are rendered when a third party intervenes between physician and patient.

To my own State Society, I said: "I propose specifically that the Medical Society of the State of North Carolina create a commission of the five most level-headed, most astute, most dedicated and most courageous men to be had to undertake the continuing task of planning an immediate and a long-range defensive and offensive program designed to preserve the private practice of medicine in North Carolina."

On September 23, such a commission was authorized by our State Society, and it is now being organized. It is my most fervent hope that two things will come from it: (1) a committee, perhaps with paid negotiators, which will assume the function of doing our bargaining with all lay groups—including government, industry, insurance companies and hospitals—when our professional services are involved; (2) a formula governing all conditions of employment when third-party agencies are implicated. No member could then enter into any arrangement with, or perform any paid professional service for, a third party until his agreement had been approved by the State Society. Continued membership in the Medical Society of the State of North Carolina would be contingent upon strict compliance with the regulations of the organization.

This plan would capitalize upon the single but

mighty weapon which lies within our grasp—control of membership.

I am well aware of the consternation and the resistance which would develop in the ranks of Medicine itself. Nevertheless, we must either bring ourselves to submit to some degree of intramural discipline, or find ourselves forever displaced to the level of the artisan.

Neither do I forget the condemnation and castigation by editorialists and by some sections of the public which would surely fall upon the profession. The third-party organizations would stop at nothing to halt our bid for professional freedom. These difficulties must be anticipated and accepted. I say in uttermost sincerity, "There is no other way." You in Iowa, and we in North Carolina, would acquire protection which goes far beyond judicial decree or legislative enactment, except as they apply to all union groups. Above all, we would save ourselves from enslavement by lay organizations.

SUMMARY

1. Our social and economic order is largely controlled by highly organized pressure groups, and only such groups can hope to maintain their integrity in it. This situation is most unfortunate, but since it cannot be changed, it must be accepted.

2. Medicine at the state level must recognize and acknowledge the gravity of the situation.

3. As we stand idly by, our rights and privileges and our immunities are being bargained away by representatives of industry, government, insurance companies and hospitals. I propose that state medical societies assume the prerogative of doing their own negotiating with third-party agencies.

4. I further propose that state medical society membership be limited to those physicians who prove themselves worthy in this battle to regain and to preserve professional freedom.

CONCLUSION

I bring to the Iowa State Medical Society the congratulations of North Carolina physicians upon the splendid effort it is making to free physicians from corporate control. Destiny has put Iowa doctors in the front of the battle which may very well be pivotal in the preservation of the private practice of Medicine in the United States. You have performed nobly, and the eyes of the profession in every state of the Union are upon you.

As encouragement, I offer you three quotations. First, from Dr. Peter Marshall: "Help us to stand for something, lest we fall for everything." Second, from Benjamin Franklin: "They that can give up essential liberty to obtain a little temporary safety deserve neither liberty nor safety."

Finally, let me conclude with my own theme song: "Freckles would make a very respectable coat of tan if they could only get together."

Eye Injury and Skin Rash Study

The W. K. Kellogg Foundation has given $28,000 to the Institute of Agricultural Medicine at SUI to finance a study of eye injuries and skin rashes among the members of Iowa farm families. The probable starting date of the investigation is February 1, but the precise site has yet to be selected.

Mr. Thomas McCorkle, an anthropologist at the Institute and staff director of the proposed study, says the need for such research has been pointed out by rural doctors and nurses, as well as by farmers, and was indicated by the results of a survey which the Institute recently completed. Attention has been drawn to a number of situations in which farm workers injure their eyes. They include wood-and metal-working, operating hammer mills, feed grinders and harvesting equipment, and driving tractors on dry, windy days. Allergies appear in many instances to have resulted from such jobs as cleaning corncribs and chicken houses, harvesting crops and shearing sheep.

A full-time Institute field worker will live in a rural community, probably on a farm, and will study many aspects of farm life in an effort to understand and describe the conditions under which accidents and other hazards occur. He will solicit suggestions from farmers who have already adopted some form of eye protection or who may be interested in helping find protective devices which will be effective for and acceptable to farm people.

Institute personnel will team with SUI physicians in an attempt to identify allergy-producing substances, verify their reactions through laboratory testing, and find preventive measures and suitable treatment.

The Institute of Agricultural Medicine was set up about a year ago to conduct medical and social research on the diseases to which farm people are especially susceptible, and to develop new preventive measures to safeguard the farmer's health. It is the first organization of its kind in the nation.

Scientific Articles

Prophylactic Surgery for Cancer of the Colon

EDWARD S. JUDD, JR., M.D.

ROCHESTER, MINNESOTA

THE PIONEERS IN abdominal surgery discovered late in the last century that they could indeed remove cancers of the colon, and even re-establish intestinal continuity. But they also learned that the resulting morbidity and mortality rates were prohibitive. Death from peritonitis was the rule, and after brief but bitter experience, they abandoned all thought of that type of surgery.

Haltingly, they then evolved the multiple-stage operation, a more or less planned procedure which thereupon was used in various countries at various times. This consisted, first, of exteriorizing the cancer, and second—sooner or later, and provided that the patient had survived the first step—removal of the cancer. Third, since the patient had been left with a double-barreled colostomy, the "spur" had to be dealt with in a series of minor operations. Finally, should the patient have been fortunate enough to survive this long, closure of the stoma was performed. Although everyone admitted that this was a tedious and unpleasant gamut for the patient to run, it seemed the only way by which he could be expected to survive, and for many decades it remained the standard procedure.

Only in recent years has progress been made toward facilitating a one-stage operation. Chief among the forward strides, of course, has been the conquest of sepsis, for peritonitis was the complication that was feared in every case. The introduction of sulfonamides was followed by a rapid succession of refinements of chemicals, and then antibiotic preparations were made available to the surgeon.

Dr. Judd is a member of the staff in surgery at the Mayo Clinic and Mayo Foundation. The Mayo Foundation is a part of the Graduate School of the University of Minnesota.

The surgeon is first to admit that there has been no single triumphant improvement in operative technic. Rather, it has been a series of brilliant efforts on the part of the bacteriologist, the chemist and the internist that has brought about the satisfactory change. At the present time, we are employing a prophylactic program to prepare the patient and his colon, and as a result, the rate of postoperative infection is being kept surprisingly low.

Antibiotics whenever indicated, before and after surgery, have become a potent weapon in the hands of the cautious surgeon. But he has learned that the injudicious use of those agents can lead to dangerous side effects.

In most medical centers, a one-stage operation is now almost routine, and the multiple-stage method is reserved for the obstructed colon or some other emergency situations. The risk of operation is very acceptable, and the reduction in hospitalization and in expense is highly worthwhile.

The second great forward stride has been in the realm of supportive therapy. Patients with cancer of the colon are frequently anemic, either from direct loss of blood through the colon, or from severe derangement in the nutritional state. The development of the modern blood bank has given the surgeon a most valuable adjunct, so that proper employment of this supportive therapy takes the patient out of the poor-risk class and puts him in a highly satisfactory category. Other supportive measures such as refined fluid agents for intravenous therapy, refined protein derivatives for the same method of administration, and experiments in the metabolism of fat and nitrogen have changed the picture markedly.

A third distinct improvement in recent years has

taken place in the field of anesthesia. Whereas the early surgeon was forced to concentrate both on anesthesia and on operative technic, the present-day surgeon knows that the best possible anesthesia is now available and he may devote all of his attention to the rather complex nature of an extensive resection. We salute the developments made by our colleagues in the field of anesthesiology.

A fourth improvement has been along the lines of control of colonic obstruction. Although the various nasal tubes now available may be of secondary importance in the treatment of obstruction of the colon, nevertheless they serve to remove swallowed air, which is responsible for a high percentage of gas in the colon, and in some instances they relieve secondary obstruction of the small bowel to make subsequent surgical procedures not only much easier but also considerably safer than they would otherwise be. Thus these tubes have been another of the means by which we have taken patients out of the class of desperate risks.

The obvious benefits of all of these great advancements have culminated in a rather happy state of affairs. The reduction of the operation to a single definitive step in a great majority of cases carries benefits which need no further emphasis. The mortality rate, which in earlier years frequently ran well beyond 30 per cent, has declined steadily, so that at the present time in most medical centers in the United States, resection of the colon is attended by a risk of no more than perhaps three or four per cent.

In addition, the resectability rate has risen steadily. Whereas in earlier years, lesions were explored somewhat timidly and the abdomen was closed rather promptly because of a certain element of question about the lesion, at present the percentage of "inoperability" has declined, and a very extensive resection may be performed in a planned, orderly, unhurried manner, and certain neighboring structures can be sacrificed whenever necessary. One might assume that the increased boldness of the surgeons and their willingness to undertake what in earlier days would have been called a "hopeless" problem would have led to a decline in the survival rates. But such has not proved to be the case, for in spite of the increase in the resectability rate in cancer of the colon, a steady rise has occurred in the number of long-term survivals. This increase in survivals is predicated, no doubt, on the adjuncts of surgical care about which I have been speaking, rather than on any spectacular advance made by the surgeon himself. The surgeon gives full credit to all of his colleagues in other fields, but the surgeon also has been alert to these various developments and is to be given praise for applying them wherever possible, so as to bring great improvement to the treatment of cancer of the colon.

It is beyond the scope of this discussion to dwell further on far-advanced cancer, or even on fully-developed cancer. The record in those areas has been well documented in many other papers. Rather, I intend concentrating here upon the possibilities for the early detection and prompt eradication of the small cancer or the precancerous lesion—the field where the greatest hope for the future obviously lies. Vigorous, radical attack on this type of condition is certain to prevent the ravages of cancer at a later date. At least three situations immediately come to mind in which the surgeon can exert considerable influence toward bettering the situation, namely, the single polyp or insolated polyps of the colon, the multiple familial polyps of the colon and, finally, chronic ulcerative colitis.

THE SINGLE OR ISOLATED POLYP

Not too many years ago, debate regarding the single or isolated polyp centered largely in the field of microscopy. It was fashionable to argue about whether or not a given lesion revealed changes consistent with a diagnosis of cancer. Perhaps we have put far too much emphasis upon microscopic study, forgetting for the moment the natural life history of the colon where the single polyp or isolated polyps had developed. Some of the ideas which were enthusiastically received no longer seem particularly important in the light of recent developments.

For all practical purposes, the surgeon considers a polyp to be a danger sign. At the moment, he is not especially concerned about whether or not the lesion exhibits microscopic changes, for he has learned that the colon that has produced a polyp is the colon that has a high potentiality for malignant change. Therefore, from the practical standpoint, the surgeon will urge that early treatment be undertaken so as to rid the patient of this potential danger.

There are many manifestations of these polyps, and there is a certain amount of leeway as regards their management. Perhaps the commonest situation is the single, well-pedunculated, entirely benign-looking adenomatous polyp of the colon. A microscopic study of such a lesion would suggest that all that is needed is a mere colotomy with excision. We certainly have no quarrel with those surgeons who confine themselves to just that procedure; in fact, we have repeatedly done so ourselves. A polyp that looks very much like a simple adenoma, but has cellular infiltration of its stalk, should be looked upon with much more suspicion. The fact that the stalk has been "invaded" conveys to the surgeon the idea that he has found a lesion of much greater importance, and although it is a tiny cancer of the colon, it still deserves a more formal treatment than simple local excision. Another variety is the sessile polyp that may look quite harmless under the microscope. However, it

has been learned that this lesion can be vicious and that if one uses conservative methods in dealing with it he can incur disastrous results. More obvious small cancers are those polyps with well-developed malignant processes already present and with various gradations in the form of polypoid carcinomas.

I had been impressed by the lack of definitive information as to just what to expect following conservative management of some of these lesions. I found a great deal of information about the "full-blown" cancers, but very little well-founded evidence of long-term follow-ups for colotomy and excision. Therefore, Dr. Carlisle and I[1] undertook a study of a consecutive series of cases in which transcolonic removal had been the only surgery performed. We selected our cases from among the records of patients operated on by a small group of surgeons whose only criterion for operating had been the fact that there were isolated or single polyps. We excluded any case in which there was a possibility of multiple polyposis of the familial variety, and we eliminated all patients who had had "full-blown" cancers in other portions of the colon.

We found 246 conservatively treated cases with follow-up periods of five of more years. Colotomy, with removal of the polyp, had been the only operation performed on the colon. In this series, we found after a prolonged survey that 72 per cent of the patients had not had further polypoid disease. That seems to be a highly satisfactory finding until one discovers, in the second half of our study, that 28 per cent of them did have further polypoid disease. Although 13 per cent underwent second treatment and were relieved of their polyps by proctoscopic fulguration, 15 per cent still required a further abdominal operation. In reviewing the surgical pathology specimens from the first operations, we were not surprised to find that the majority of those polyps revealed malignant invasion of the pedicle, and we were thus led to conclude that the patients would have been much better off if they had had a more radical operation the first time.

We found a definite importance attached to the location of the polyp. That is, a sizable majority had occurred in the sigmoid and descending colon, and the recurrence rate was greatest in those portions, too. On the basis of incidence alone, it would appear that when several polyps are found in that region, resection of the left portion of the colon is perhaps the best treatment, not only to eliminate all immediate question about the polyps, but also to remove that portion of the colon which has been demonstrated to be most vulnerable to the development of polypoid disease.

In the right half of the colon, we found that polyps are much less likely to appear, but that when they are discovered, their degree of malignancy is usually higher from the outset, and conservative removal in that portion much more frequently results in recurrent polypoid disease.

We found that a very distinct importance attached to the number of polyps demonstrated at the first visit. The single and pedunculated isolated adenomatous polyp seemed very easy to cure by local excision. But if multiple polyps were present —and especially if the polyps were scattered about the colon—a dangerous situation existed.

This study has served to warn us that the first operation in such a case should be radical. Although we found that the risk of subtotal colectomy is very definitely greater than that of single polypectomy, perhaps the risk is no greater than is that of multiple polypectomy, and certainly the degree of prophylaxis obtained is well worth the increased risk.

We were interested, also, in the time factor, for we felt that a five-year minimum should be mandatory in a follow-up study of this type. We found this to be quite true, for an average of 3.8 years elapsed before the development of further polypoid change. This also suggests that a considerably longer period of follow-up should be the rule, and the fact that the patient is free from disease for the first five years should not be regarded as grounds for dismissing him from all further consideration.

Since this was a surgical study, we thought it imperative that we establish a definite idea concerning the hospital mortality rate, and we found that it was extremely low (0.8 per cent). Two of the 246 patients had failed to survive the operation, and peritonitis was the cause of death in each instance. Both of these patients had been operated upon early in the series, and perhaps there now is less risk than there was for them. However, any abdominal operation performed on patients in this age group must always have an irreducible minimum of risk. A comparison of this important rate with that for segmental or subtotal colectomy reveals that we must be certain of our ground in recommending more radical surgery. Whereas until relatively recent years the rates for the more radical operation certainly were more than ten per cent, at the present time in most centers in the United States the rate varies between three and five per cent. Although this rate seems quite acceptable, it is certainly much higher than the one for colotomy with excision. At the present time we feel that by taking advantage of all the progress that has been made in all fields in recent years, we should have more to offer these particular patients. Therefore, when we are confronted with a situation in which several polyps exist in a certain segment of colon, all other factors being satisfactory, we usually proceed at once with segmental resection of that part of the bowel. When scattered polyps have been visualized, even though the patient may be extremely young, we have argued for subtotal colectomy with ileosigmoidostomy,

although the risk is very definitely higher. We have learned that the subsequent development of other colonic polyps, or even a full-fledged cancer of the colon, is such a distinct possibility that it is far preferable for the patient to undergo one operation with an established hospital mortality rate, than to undergo repeated operations of what might seem to be a lesser seriousness, each time repeating the risk and losing the valuable factor of prophylaxis considered in the light of the time element itself.

A sterile proctoscope is now kept available in our operating room. If there is a single polyp present, the bowel can be opened at that point and the proctoscope introduced for direct visualization of the colon, both proximally and distally. Care must be exercised to avoid contamination, but with a little practice, this can be done, and the surgeon will be pleased to find an unsuspected polyp, for he can deal with it properly at a single operation. We consider this to be a distinct advantage. We are still performing transcolonic removal of single isolated polyps, but we are much more alert to the potentialities than we once were, and much better prepared to proceed at once with radical surgery whenever it is indicated.

FAMILIAL MULTIPLE POLYPOSIS

Concerning familial multiple polyposis, a fortunately rare but always most interesting condition, it is important for us to remember that cancer of the colon will develop in 100 per cent of such patients if they live long enough. In former years, although many surgeons were aware of that fact, relatively few patients were rendered free of this potentially dangerous lesion because the operation, of necessity, was carried out in multiple stages. The risk attached to each stage, combined with the prolonged hospitalization, the expense and the emotional factors led many patients and surgeons to become discouraged before the operation was completed. Coupled with this was the fact that children had vivid memories of what had happened to the older members of their family, and when they found that they themselves were harboring the same condition, they could not bring themselves to face the distressing problems that they were sure awaited them. Therefore, many of them died unnecessarily of cancer of the colon.

We feel that this situation has now been drastically altered. With all of the advances available to the surgical team today, if cancer is not present in the rectum, we feel that we have a great deal to offer in the one-stage removal of the terminal portion of the ileum and all of the abdominal portion of the colon down to the very low part of the sigmoid, completing the operation as an end-to-end ileosigmoidostomy.

As soon as the wound has healed well, the proctologist may proceed with proctoscopic fulguration of the remaining polyps. Although some authorities prefer having the proctoscopic step taken first, we accept the greater risk immediately, and carry out the proctoscopic maneuver as soon as it is evident that the patient is convalescing properly. One of the advantages of that arrangement is that it prevents a waste of effort. If the proctologist were to do his work first, he might spend considerable time in fulgurating one area of the low part of the sigmoid that the surgeon might subsequently decide to remove. Then, too, the surgeon would be unable to proceed with resection for several months after fulguration, in order to avoid dealing with a very inflamed bit of bowel.

We have argued for the end-to-end anastomosis because it facilitates the proctologist's subsequent visualization and extirpation of all of the remaining polyps. It thus has a distinct advantage over the older operations which left stomas here and there about the abdominal wall and frequently left blind loops of colon which subsequently could never be properly approached.

A preliminary survey of a small group of such patients was presented by Black and Hansbro.[2] Since the patients in that small group did extremely well after their operations, surgeons at the Mayo Clinic who specialize in operations on the colon now have extended the number considerably. In consequence, all of us are convinced that it is a very satisfactory method.

We are well aware that some authorities insist that the rectum must always be removed. We agree with them that it should whenever cancer is present there, but we do not agree in those cases in which there is no cancer in the rectum and in which the proctologist feels that he can control the rectal polyps by fulguration later.

Ileostomy may be a relatively simple maneuver, but an ileac stoma may necessitate a highly undesirable type of life for the patient. Therefore, if ileostomy can be avoided, we prefer to do so. We are well aware that cancer may develop later in the retained portion of the rectum, but the rectum can be kept under close observation and, if necessary, can be removed at a later date. Fortunately, the patients are very easy to follow up. They are delighted with the results, for the function of the colon quickly returns to a rather normal state, leaving the patient with perhaps two or three stools per day and no nutritional changes whatsoever. The patients are especially cooperative, for they reflect on the course of their relatives who have undergone the multiple-stage operation. In this very interesting group of patients, we feel that distinct prophylaxis can be accomplished by early operation performed under ideal circumstances.

CHRONIC ULCERATIVE COLITIS

Chronic ulcerative colitis may be a miserable disease, not only for the patient but also for the physician entrusted with the care of the patient. Whereas many patients have relatively mild changes in the colon and can learn to live with their disease in relative comfort, many others develop complications that demand surgical intervention. By far the most serious complication of chronic ulcerative colitis is cancer. The outlook in such a case is grave indeed, for almost always the cancer is much more malignant than is the average cancer of the colon, being not only of high grade according to Broders' scale, but also revealing considerable invasion in the manner of Dukes' study. If such a cancer is neglected for any time at all, even five-year survival is impossible.

The incidence of cancer in chronic ulcerative colitis is difficult for us to assess at this time. Most authorities formerly agreed that cancer might perhaps develop in three per cent of patients. In later surveys of large numbers of patients, the fact that some patients being operated on for other complications of ulcerative colitis were found to be harboring an unsuspected cancer required a revision of the statistics. In consequence, we are now convinced that there must be a somewhat higher frequency. It has been said that the incidence is in the neighborhood of 12 to 15 per cent, and although those figures may reflect nothing more than an informed guess, they serve to warn us that we must be much more alert than we have been to the possibility of this dread complication.

In earlier years, surgeons were hesitant to undertake prophylactic surgery because the long series of operations left the patient for a time with perhaps more than one stoma. Until relatively recent times, ileostomy was considered the only operation that could be performed on one day. If the patient survived, and if the ileac stoma finally became well regulated, the surgeon then proceeded to remove the colon bit by bit in a multiple-stage operation. Since each stage was attended by definite morbidity and mortality rates, relatively few patients finally came to be rid of the entire colon.

All of this picture has been changed of late, so that at present in the majority of medical centers, the entire operation can be completed in two steps as a standard procedure. Most of the patients will be desperately sick and in a poor nutritional state. For them, an operation of such tremendous magnitude will be fraught with considerable risk. By employing all of the modern adjuncts possible, we can take many of the patients out of the desperate-risk class and proceed with relative safety. If cancer is not present in the rectum at the first operation, many surgeons have been reluctant to complete the colectomy on the first day, for they have felt that the amount of risk was unjustified. The small rectal segment may be removed some months later at a second operation. Logically, the line of thought which argues for total colectomy in one stage has developed in many centers. In fact, because this has been carried out with increasing frequency, considerable information is now available. This operation imposes a great deal of surgical trauma on the patient, and the surgeon must be certain that the indications and all possibilities are very clear before he accepts the associated risk. The fact remains that if the chance of cancer is realized fully by all observers, and if surgical removal is carried out in time, some definite possibility of prophylaxis exists. On the other hand, if such a case is neglected and if the potentialities are unrecognized, the outcome will be uniformly fatal.

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Sioux Valley Medical Association

The Sixty-first Annual Meeting of the Sioux Valley Medical Association will be held at the Hotel Sheraton-Martin, in Sioux City, February 26, 27 and 28, 1957. Dr. Patrick Cmeyla, of Sioux City, is in charge of the program.

On Tuesday afternoon, February 26, members of the staffs of Sioux City hospitals will hold a clinic, and on Tuesday evening the customary smoker will be held at 7:30 at the Hotel.

On Wednesday, February 27, guest speakers will present papers on topics in internal medicine, surgery, anesthesia and EENT. The speaker at the annual banquet, at 7:00 p.m. on Wednesday, will be Dr. Gunnar Gundersen, of LaCrosse, chairman of the Board of Directors of the AMA.

On Thursday, February 28, guest speakers will lecture on topics in pediatrics, orthopedics and obstetrics.

All physicians are cordially invited to attend, and they are encouraged to make their hotel reservations early. It is expected that the AAGP will accredit the meeting for postgraduate study credit.

Pulmonary Resection for Tuberculosis

A Statistical Review of 235 Patients

J. L. EHRENHAFT, M.D., MONTAGUE S. LAWRENCE, M.D., MARY E. GODFREY, M.D., AND W. M. SPEAR, M.D.

IOWA CITY AND OAKDALE

WITH THE ADVENT of antituberculous drugs, mainly streptomycin, a radical change took place in the treatment of pulmonary tuberculosis. Temporary and permanent collapse procedures rapidly fell into disuse, and resection of the tuberculous lesions, preceded by adequate antituberculous drug management, became the treatment of choice.

The aim in the treatment of pulmonary tuberculosis prior to the use of antituberculous drugs had been clearly established. Conversion of the patient's positive sputum and stabilization of the pulmonary lesions were thought to constitute a satisfactory result. Those aims frequently were obtained only by the additional use of temporary or permanent collapse procedures. With the advent of antituberculous drugs, the criteria for and the concept of a satisfactory result changed. Sputum conversion due to drug therapy alone could not be accepted as the only criterion in most instances. Furthermore, the treatment of the disease by resection—now made so much safer by the preoperative influence of the drugs—has brought a change in the entire concept of what should be achieved. If sputum conversion and stabilization of the lesions are the only criteria to be considered, statistics are difficult to evaluate, especially if one wants to determine the role played by surgical resection in the treatment of patients during drug therapy. No pulmonary resection will remove all of the tuberculous disease, but it can remove the major foci and prevent further spread of disease from those areas. Drug therapy alone probably would heal many of the lesions without surgical treatment. Thus it is our opinion that in the evaluation of results of pulmonary resection for tuberculosis the following accomplishments should be looked for: (1) elimination of the main foci of the disease, with permanent conversion of the sputum and without permanent continuation of antituberculous drugs; (2) adequate pulmonary reserve following resection; and (3) the patient's return to his home surroundings and, ideally, to a gainful occupation.

GENERAL CHARACTERISTICS OF THE GROUP STUDIED

We are reporting on a series of 235 patients, in all of whom pulmonary resections were carried out during the four-year period between July 1, 1949, and June 30, 1954. Thus, there has been a follow-up of two years for the patients last operated upon. All the patients had streptomycin therapy, and in addition many received para-aminosalicylic acid and some Isoniazid in the preoperative period. The diagnosis of pulmonary tuberculosis had been established in the patients by the finding of positive sputa on smear or culture. Except in four instances, all the lesions in the resected pulmonary tissues proved to be tuberculous by section or culture. The pathologic reports in those four were not consistent with tuberculosis, in spite of the positive diagnosis of tuberculosis that had been made prior to surgical therapy.

The patients reported upon in this study represent a rather uniform group. Nearly all of them were residents of the state of Iowa, and predominantly they were from small urban or farming communities. The vast majority were treated at the State Tuberculosis Sanatorium, in Oakdale. The surgical procedures were performed at University Hospitals, Iowa City, by the senior staff and residents of the Thoracic Surgical Service.

A total of 236 resections were performed on the 235 patients. There were no bilateral resections in this group. In one instance it became necessary to perform pneumonectomy after an earlier right upper lobectomy.

AGE AND SEX DISTRIBUTION

The age and sex distribution of the patients (Figure 1) shows rather similar curves. The num-

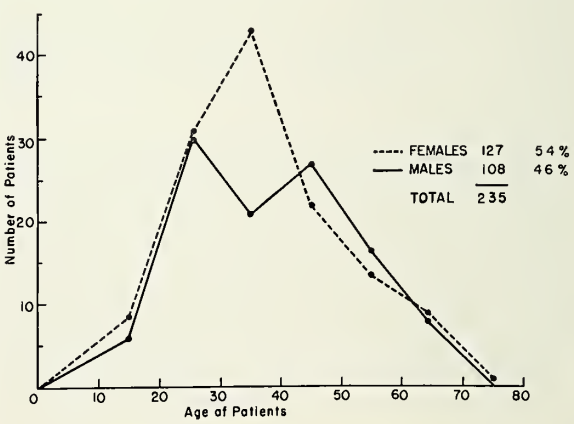


Figure 1. Sex and age distribution of patients.

At the SUI College of Medicine, Dr. Ehrenhaft is a professor of thoracic surgery, Dr. Lawrence is an associate in the Department of Surgery, Dr. Godfrey is a Trudeau Society fellow in the Infectious Disease Laboratory and Dr. Spear is a lecturer in surgery. All of them are staff members of the State Tuberculosis Sanatorium at Oakdale.

ber of females (127 or 54 per cent)was slightly larger than the number of males (108 or 46 per cent). The ages of the patients were between 20 and 40 years.

Age of Patients and Type of Disease

In Figure 2, the chart showing the ages of patients compared with the stages of disease existing at the time of resection, one can see that the

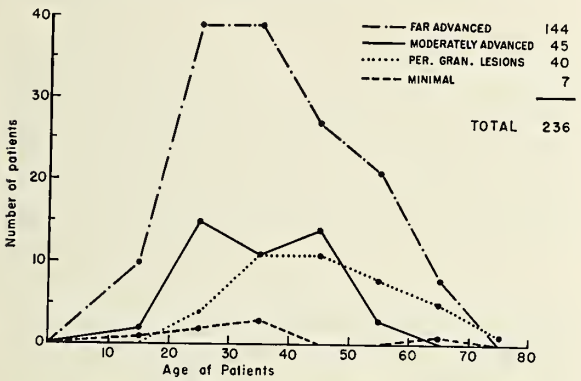


Figure 2. Age and classification of patients at time of resection.

largest number of patients were in the far-advanced group between the ages of 20 and 61 years, the peak being between 20 and 41 years. Of the 236 operative procedures, 189 (79 per cent) were performed upon patients with moderately-advanced or far-advanced disease. Only seven patients had resections for minimal disease. The patients listed under the heading "Peripheral Granulomatous Lesions" comprise a group in whom small, often stationary lesions had been observed in the periphery of the lung. Some represented so-called tuberculomas, and others inspissated cavities.

Additional Non-Tuberculous Disease

In this entire group, there were 16 diabetic patients (7 per cent). This seems to be the average number to be expected. Diabetes did not represent an unusual complicating factor in carrying out the drug management and resection therapy. There were eight patients with mental deficiency. In one patient, a bronchogenic carcinoma was removed, and in another patient a metastatic solitary lesion secondary to a malignant melanoma was removed at the time of the pulmonary resection for tuberculosis.

Type and Distribution of Resections

In all, there were 54 pneumonectomies, of which 39 were carried out for left-sided disease (Figure 3). Lobectomies, multiple lobectomies and combinations of lobectomies and segmental resections were performed in 102 instances (Figure 4). Of these, 80 were on the right side. The right upper lobe was removed in 57 instances, and it was by far the commonest site of disease treated by resection. In 36 patients, segmental resection was performed (Figure 5). There, again, the right upper lobe was the commonest site involved. The peripheral granulomatous lesions (Figure 6) seemed to be rather evenly distributed throughout both lungs. In 44 instances, local resection was used to remove them, together with some of the surrounding lung tissue. In all of these cases the diagnosis of tuberculosis had been made either by sputum examination prior to surgery or by sections or cultures taken from the removed specimens. The largest number of patients were subjected to pneu-

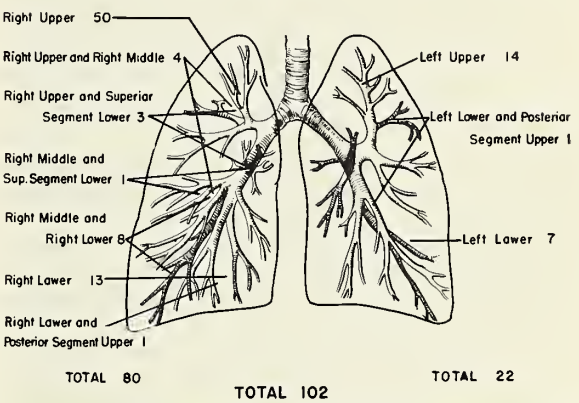


Figure 4. Lobectomies and combinations of lobectomies and segmental resections.

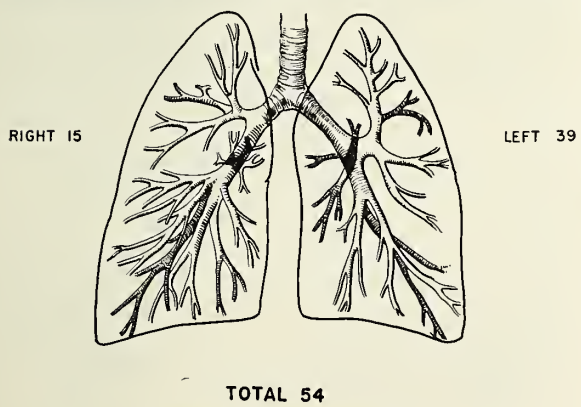


Figure 3. Pneumonectomies.

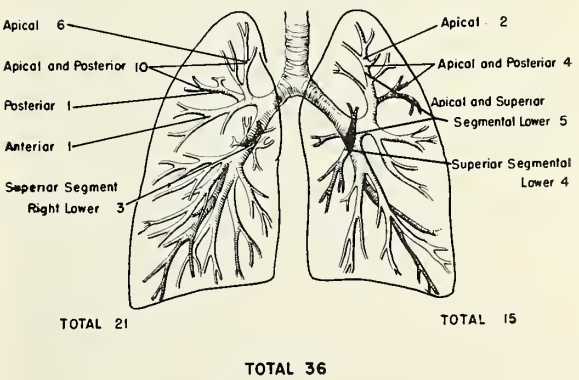


Figure 5. Segmental resections.

monectomy between 1951 and 1953 (Figure 7). Lobectomies and segmental resections were still on the increase in June, 1954, at the end of the period for this series of patients.

TEMPORARY AND PERMANENT ADDITIONAL COLLAPSE PROCEDURES

Only five patients in this series had had thoracoplasties prior to the time of resection, and none of them had been done in preparation for the pulmonary resection. In all of these instances, thoracoplasty had failed, and there were persistent underlying cavitations or areas of bronchiectasis. Twenty-two patients had had pneumothorax on the side of resection, but it had been discontinued prior to the time of surgery. Pneumoperitoneum was given to 77 patients in this series. Frequently it had been established as an additional measure during the course of antituberculous drug therapy prior to resection. It was then maintained during the operative period and for a short time following the procedure. In occasional patients we have established pneumoperitoneum just before the time of resection, hoping that it would be helpful in the obliteration of the post-resection intrapleural space. In our opinion, it has definite value following resection of the right upper lobe, especially if the lobe to be resected is still rather large. Only 14 patients had had temporary or permanent phrenic interruption prior to pulmonary resection. None had been done in preparation for it.

We have never used thoracoplasty procedures on an elective basis, either in preparation for or after upper lobectomies or extensive upper-lobe segmental resections. We have always believed that with good postoperative care, the remaining lung tissue will nearly always fill the pleural space left empty by the resection. The incidence of breakdown of other areas involved by disease in the same or in the opposite lung does not seem to be influenced by the elective performance of thoracoplasty, either prior, at the time, or sometime after the pulmonary resection. Following pneumonectomy, however, we have performed thoracoplasties nearly routinely. Usually, this procedure was carried out three or four weeks after pneumonectomy to prevent some of the emphysema that otherwise would have occurred in the remaining lung, particularly in patients of the older age group.

After complications had occurred, and only during the course of treatment for postoperative complications, we had to perform limited thoracoplasties in 10 patients (4.2 per cent) following upper lobectomies or segmental resections.

BRONCHOSCOPY AND BRONCHOGRAPHY PRIOR TO RESECTION

Rather routinely during preoperative evaluation of most patients in this series, we used bronchography and bronchoscopy, procedures which we now carry out preoperatively on all patients. We have employed iodized oil for bronchography (Table 1) without ill effects in 136 patients in this series. At present, Propyliodone suspension in oil* is in use as the contrast medium. A great deal of information can be gained if one outlines the bronchial tree, not only in the area that he is considering for resection but also in other areas of the lung. Often by such means, one can demonstrate other, previously unsuspected bronchiectatic disease that may alter the decision and modify the extent of the contemplated resection. In this series of 136 bronchiograms, 118 (87 per cent) gave valuable preoperative information.

TABLE 1

RESULTS IN 136 PRE-RESECTION BRONCHOGRAPHIES

Bronchiectasis	96	87 per cent
Poor filling or block of segmental or lobar bronchi	22	
Negative	18	13 per cent

TABLE 2

RESULTS IN 200 PRE-RESECTION BRONCHOSCOPIES

Negative or Chronic Bronchitis	134	67 per cent
Endobronchial Disease	29	
Bronchostenosis	37	

Contrastingly, the preoperative information provided by bronchoscopy (Table 2) has been somewhat less valuable. In 200 preoperative bronchoscopies in 200 patients in this series, negative re-

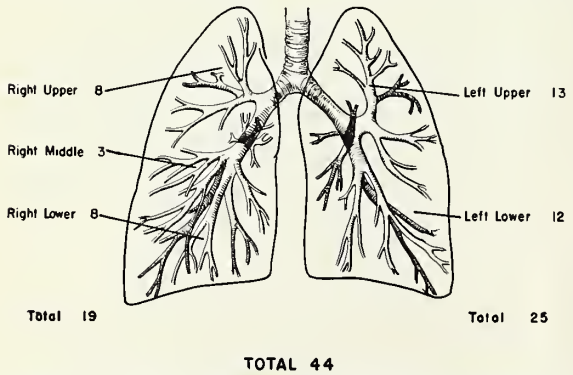


Figure 6. Wedge resections for peripheral granulomatous lesions.

* Dionosil oily—Glaxo Laboratories, Ltd., Greenford, England. Distributor: Picker X-Ray Corporation.

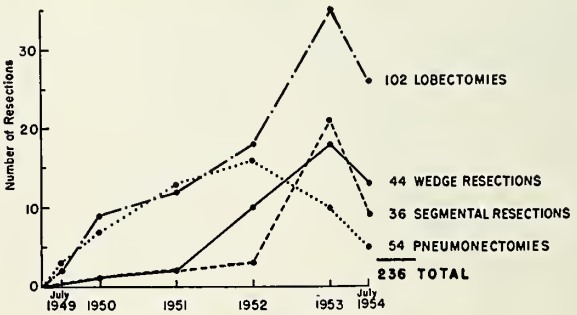


Figure 7. Incidence and type of resections.

sults were obtained in 134 instances (67 per cent).

For the sake of simplicity, we have broken the indications for resection into six groups (Table 3).

TABLE 3

INDICATIONS FOR RESECTION

Destroyed lung or lobe	56
Bronchiectasis	67
Poor filling of bronchogram	7
Persistent cavitation	34
Roentgenographic evidence of disease (Exploratory thoracotomy)	55
Miscellaneous	17
Total	236

Extensively destroyed lung tissue was the indication in 56 patients. Many of those were subjected to pneumonectomies. The left lung was the one most often affected. Tuberculous bronchiectasis was the predominant indication in 67 patients, and some of them had bilateral disease. In this group the right upper lobe was most frequently the site of disease to be resected.

The group of 55 patients subjected to surgical exploration on the basis of roentgenologic evidence alone had, for the most part, peripheral granulomatous lesions.

In 17 patients there were various reasons for resection, such as previous thoracoplasties with remaining underlying disease, bronchial disease or other indications.

DRUG-RESISTANT PATIENTS

As a general rule, patients received antituberculous drug therapy for a minimum of six months prior to resection. The vast majority came to surgery when sputum examinations, cultures or animal inoculations had shown that the sputum had converted. Nevertheless, 16 (7 per cent) of the entire series were drug-resistant (Table 4). Resections were undertaken when the sputum was persistently (often highly) positive, for we hoped that improvement and possibly sputum conversion could be obtained. Twelve of the 16 patients had positive sputa by direct smear, and four others by culture. Immediate sputum conversion followed resection in eight patients. Later, on prolonged drug therapy, an additional three patients obtained negative sputa and healing of the disease. In four patients, the sputum failed to convert, and one patient was lost to the follow-up. It is interesting to note that of the seven patients in this group who were subjected to segmental resection, three failed to obtain a satisfactory result. Fortunately, there were no operative or hospital mortalities in this group of patients, although a high complication rate was to be expected.

TABLE 4

SPUTUM CONVERSION FOLLOWING RESECTION IN 16 PATIENTS WITH POSITIVE SPUTUM (STREPTOMYCIN RESISTANT)

	Total	*Immediate Conversion*	*Late Conversion*	*No Conversion*	*Not Followed*
Pneumonectomies	3	1	1		1
Lobectomies	6	4	1	1	
Segmentals	7	3	1	3	

PATIENTS WITH POSITIVE SPUTUM FOLLOWING RESECTION

Of the entire series of 235 patients, 16 (7 per cent) continued to have intermittently positive sputum or again developed positive sputum after having had negative sputum immediately following resection. All but one of them had far-advanced disease, the exception being a patient who had only moderately-advanced disease in the left lower lobe. All of those patients were continued on intensive drug therapy, and in some instances on pneumoperitoneum. Eleven patients finally converted to negative sputum two or more years after resection, leaving five patients with unsatisfactory results. Of the 16 patients, only five are rehabilitated. Four are working full time, and one part-time.

PATIENTS CONTINUED ON PROLONGED DRUG THERAPY AFTER RESECTION

Of the entire group of 235 patients, 28 (12 per cent) are still on antituberculous drug therapy two or more years after pulmonary resection. Nearly all of them have left the Sanatorium and are continuing drug therapy under the supervision of their local physicians. Most of them are now taking Isoniazid and para-aminosalicylic acid. The reasons for their continuing the drugs are listed in Table 5.

COMPLICATIONS FOLLOWING RESECTION

Complications following resection (Table 6) occurred in 37 patients (about 16 per cent). We have included only the more serious complications which influenced the patient's immediate or postponed his ultimate recovery. We divided those patients into four groups: (1) postoperative em-

TABLE 5

REASONS FOR DRUG THERAPY AFTER RESECTION

Bilateral disease	14
Empyema	2
Bronchopleural fistulae	2
Miscellaneous (Spread to opposite lung and incomplete expansion of lung)	10

TABLE 6

COMPLICATIONS IN 236 RESECTIONS

Empyema		9
Pneumonectomies	3	
Lobectomies	4	
Segmental Resections	2	
Incomplete Expansion of Lung		7
Right Upper Lobectomies	6	
Segmental Resections, Left Upper Lobe	1	
Broncopleural Fistula		9
Pneumonectomies	3	
Lobectomies	5	
Segmental Resections	1	
Spread to Opposite Lung		12
Pneumonectomies	2	
Lobectomies	10	
TOTAL		37 (15.6%)

pyema, (2) incomplete expansion of the lung, (3) bronchopleural fistulae, and (4) tuberculous spread to other areas of the same or the opposite lung.

Empyema resulted in nine patients (3.8 per cent) following three pneumonectomies, four lobectomies and two segmental resections. One patient in this group died. Four patients were subjected to thoracoplasties to obliterate the empyema space, and in two patients the empyema was drained and satisfactory healing took place. One patient still remains in the hospital, and two patients with positive sputa have left despite medical advice to the contrary.

Incomplete expansion of the remaining lung was encountered in seven patients (2.9 per cent). One patient had a segmental resection of the left upper lobe, and the six remaining patients all had right upper lobectomies. It has been our experience that the remaining lung, in most instances, fills the intrapleural space only belatedly or incompletely following right upper lobectomies alone, or following right upper lobectomy in combination with segmental resection of other lobes. In this group, four patients were subjected to post-resection thoracoplasties to obliterate the intrapleural space. Two patients left the hospital against advice and without undergoing a space-obliterating procedure. One patient was discharged with a negative sputum, but with a very small, incompletely obliterated intrapleural space.

Bronchopleural fistulae developed in nine patients (3.8 per cent). Three patients had been subjected to pneumonectomies, five patients to lobectomies and one patient to segmental resection. Two patients in this group finally died as a result of the complications. In two patients the fistulae healed following thoracoplasty procedures. In four patients, the bronchopleural fistulae are still present and for various reasons have not been treated further by surgical means. One patient was lost to follow-up. In this group of nine patients, two have continued with positive sputum and have never converted.

Post-resectional spread to the ipsilateral or contralateral parts of the lung occurred in 12 patients (5.1 per cent), 10 after lobectomies and two following pneumonectomies. Of the 12 patients, eight were finally discharged with negative sputum, four are still on drug therapy and two required readmission to the hospital at a later date.

OPERATIVE AND HOSPITAL MORTALITY

The operative and late hospital mortality in this group of 235 patients was rather encouraging. There were a total of 10 recorded deaths (4.2 per cent), six operative and four late.

Additionally, four deaths occurred late (1.7 per cent) while the patients were still in the hospital.

FOLLOW-UP OF PATIENTS

Many of the patients have been followed by means of the return visits that they have made to the Outpatient Clinic at the Oakdale Sanatorium (Table 9). In addition, follow-up letters have been written to patients who have not made recent visits to the Clinic. Final and recent information is available on 168 patients (71 per cent) of the original 235 who were subjected to pulmonary resection. Of the 168, there are 101 (60 per cent) who now work part or full time.

TABLE 7

CAUSES FOR OPERATIVE DEATHS

Operative hemorrhage	1
Thrombosis, pulmonary artery	1
Necrotizing pneumonia	2
Transfusion anuria	1
Empyema (late)	1

TABLE 8

CAUSES FOR POSTOPERATIVE HOSPITAL DEATHS

Progressive tuberculous disease	1
Cardiac failure	1
Suicide	1
Cerebral hemorrhage	1

Sixty patients (24 per cent) have been lost to follow-up, but one must assume that in the sub-group of 33 there are very many who have returned to gainful employment, for their having been discharged is grounds for expecting their eventual rehabilitation. Eleven patients were transferred to other hospitals. Twenty others are well but, for various reasons, have not resumed work. Only two patients of the original group of 235 have remained at the Oakdale Sanatorium, and three other patients have required readmission because of further difficulties or progression of the disease.

TABLE 9

FOLLOW-UP OF 235 PATIENTS

Patients died before discharge		10	
Discharged, not followed	33		
Left hospital against advice, not followed	27	60	(24%)
Left hospital against advice, followed		31	
Working full time		77	
Working part time		24	
Not working		20	
Transferred to other hospitals		11	
Still in hospital		2	
Readmitted to hospital		3	
Total patients followed		168	(71%)
Of 168 patients, those gainfully working		101	(60%)

SUMMARY

We have reported on 235 patients who were subjected to pulmonary resections for pulmonary tuberculosis during the early period of antituberculous drug administration. The present concepts in the treatment of pulmonary tuberculosis have been discussed, and we have attempted to illustrate the results of resectional surgery under those concepts.

Drug Therapy for the Emotionally and Mentally Disturbed

The Psychiatrist's Point of View

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We hear a great deal today about drug therapy for nervous and mental patients. For years we were satisfied to use drugs in treating symptoms, thus making our patients more comfortable and more amenable to care. Sedatives, analgesics and anti-convulsives have been the order of the day for a long time. But now we are beginning to feel not only that some of the newer drugs can do a better job symptomatically, but that there is a strong chance of their effecting cures. Yet, before we can be sure that the newly introduced preparations will do the whole task, I believe we shall have to conduct many more experiments and extend our knowledge very considerably.

It may be well for me to group the drugs into certain classes for the purpose of this discussion. First, I shall take up the placebos. Though I suppose there is no one who would use one of them to begin therapy, a number of writers are emphatic about their importance as a means by which we can evaluate the many drugs that are coming onto the market.

In 1954, Modern Drugs listed over 300 new pharmaceuticals, and 50 of them were classified as analgesics, anti-epileptics, anti-depressants, muscle relaxants or sedatives. For pain in angina pectoris and intermittent claudication, two groups of experimenters[1] used heparin and a placebo. They found that the placebo produced results which were just as satisfactory as those produced by the heparin. Wolf and Pinsky,[2] in an experiment with 31 tense and nervous patients, used a placebo and a well-known muscle relaxant by the double-blind method. Their findings showed that the placebo and the relaxant had been about equally effective. Thirty per cent of the patients said they felt better; 10 per cent said they were worse; and 60 per cent reported no change. Several patients who had been given placebos showed a drug reaction.

Placebo control will make our evaluation of these new drugs realistic, and they will have a permanent place in therapy whenever we employ drugs that are habit-forming.

The second group of preparations that I shall discuss are the analeptic or stimulating drugs. Meretran, dextro-amphetamine and Ritalin (methylphenylpiperdylacetate) are examples. The need for stimulating drugs is as urgent as is the need for sedatives. But according to Davis and Severinghaus,[3] of Hoffman-La Roche, "We have yet to achieve advances in this field analogous to the findings of reserpine and chlorpromazine in sedation."

And other group of drugs, the hallucinogens, may be mentioned in this connection. Although they are not therapeutic agents, studying them may lead us to some findings of therapeutic significance. The two principal ones are mescaline and lysergic acid diethylamide tartrate (LSD). They upset the psychic processes in normal subjects as well as in schizophrenics, and produce a model psychosis. Dr. Henze, vice-president of Sandoz, said recently that his company thinks LSD must somehow get into the enzyme system, for it produces its effects through very small doses. If that mechanism could be understood and controlled, a cure for schizophrenia might be no more than just around the corner.

The final group that I wish to comment on consists of the sedatives or tranquilizers. Drugs of this type are coming on the market in increasing numbers. Equanil and Miltown seem to be the most effective in relieving mild anxiety and tension states, and usually they produce little or no side effect. Phenergan, an anti-histaminic, is effective in that it potentiates sedatives, relieves apprehension and produces light sleep. Unfortunately, it has some side effects such as drowsiness, dizziness, blurring of vision and dryness of mouth.

For the profound disturbances that occur in the psychotic state, both acute and chronic, we find that three drugs are being used extensively: reserpine, chlorpromazine (Thorazine) and azacyclonal (Frenquel). A fourth one, promazine, is just getting under way. Just recently I saw a movie showing what promazine can do in acute psychotic states. The most impressive features were that a large dose (100 mg.) could be given intramuscularly, that it could be repeated in a few minutes if necessary and that it produced no appreciable side effects.

I shall confine my remarks to a summary of the experience that the staff has had with tranquilizers

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at the large state hospital where I am now employed. Azacyclonal (Frenquel) was tried for a short time, but was discarded as disappointing. Reserpine has not been used so extensively at Marlboro as it has been in some other places. The staff members have reserved it for hypertensive cases, particularly among the aged, and have succeeded by that means in allaying the confusion and agitation that more often than not complicate such cases.

At our hospital, the drug of choice is Thorazine (chlorpromazine). The physicians prefer it because, they say, it is more effective, and the patients' reactions to it are more predictable. Its disturbing side effects have been fewer than those of reserpine. Between July 1, 1955, and March 1, 1956, Thorazine was given to 643 patients more or less equally divided as regards sex. Because our hospital still stresses electro-convulsive therapy and insulin coma for its new admissions, 80 per cent of the patients given Thorazine were from the chronic overactive disturbed population. Each patient was checked daily for blood pressure, temperature, pulse, respiration and certain behavior symptoms while a maximum dosage was being built up and maintained for a period of 30 days. When it seemed that a maximum of benefits was being obtained, the patients were checked weekly, unless something unusual turned up. Of this group, 50 per cent showed varying degrees of improvement and have been kept on maintenance doses. The period has not been long enough to permit our determining a relapse rate.

During this period, 150 patients who had been taking Thorazine for varying lengths of time went on convalescent leave and were instructed to continue the drug under the supervision of their family physicians. This figure has little or no significance so far as Thorazine is concerned, for all of the patients had had other therapies, and many of them were placed on Thorazine just before they left the hospital simply because we hoped it might help prevent their getting into difficulty.

The ascertainable benefits can be listed as follows. The census of our two disturbed buildings was reduced by 24 per cent by transfers to other cottages. Sedation by electro-convulsive therapy was reduced by 37 per cent. It was established by the nursing personnel that noise had been reduced at least 60 per cent, and that damage to persons and property had been cut approximately 50 per cent. Conversely, there has been a 50 per cent increase in recreational activities in the disturbed buildings. The attendants now have more time in which to plan and supervise constructive activities for those who have to remain in those buildings.

We do not know what significance it may have, but 12 per cent of our 40 unsuccessful transorbital lobotomy cases have shown considerable improvement under Thorazine therapy.

On the debit side, I must report that 6 per cent of our Thorazine cases have shown side effects such as syncope, jaundice, hypotension, extreme drowsiness, dermatitis and Parkinsonism. There have been no deaths.

We have not used this drug on any patient undergoing electro-convulsive therapy, but in the small number of instances in which we have combined it with insulin therapy, we have seen no increased improvement.

Because we have felt the need for supervising Thorazine patients closely, the nursing staff members are frank to admit that our use of the drug has markedly increased their work load. If we keep large numbers of patients under drug therapy, we shall need either to hire additional nursing personnel or to rearrange the duties of the people whom we now have.

Another of our new responsibilities is that of analyzing our data more carefully so that our reports may become more meaningful, and we are in the process of making that improvement. Furthermore, we must strike a balance between the investigative and the therapeutic aspects of this drug activity.

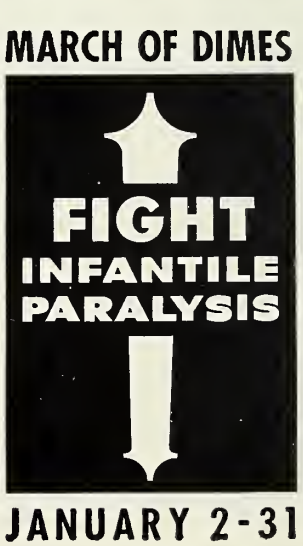
Our staff members are not so enthusiastic as are some other people. We are glad to have the new drugs, and we expect to continue using them as adjunctive therapy, but we see no signs that they are likely to empty our hospital or even markedly reduce our patient population.

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Drug Therapy for the Emotionally and Mentally Disturbed

The Internist's Point of View

HARRY B. WEINBERG, M.D.

DAVENPORT

In recent years, pharmaceutical progress has been phenomenally rapid. For some reason, however, the advances seem to have proceded in a horizontal manner, as it were. For example, about a decade ago the concept of amino acid administration was introduced, and within a relatively brief period it appeared that amino acid preparations were destined to be the *sine qua non* of all therapy. The alert pharmaceutical houses bombarded us with scented and unscented, amino-acid and intermediate preparations for oral and parenteral use, and each of them was claimed to surpass all of its predecessors. I wonder where all those products are today. At a later period, we were overwhelmed by countless varieties of antihistaminics, some of which are still being found useful in properly selected cases. Not too long ago, I recall being deluged by a series of anticholinergic drugs, each of which, the accompanying leaflet said, was better than any of the competing products. I am not entirely convinced that any one of them is outstandingly better than belladonna.

Today, we are in the era of new drugs for the psychiatrically disturbed patient: reserpine, chlorpromazine, meprobamate, azacyclonal, methylphenylpiperdylacetate, *et cetera,* plus any number of nonbarbiturate soporifics that I intend not even to mention further. I am certain that it is too early for a final opinion on the proper places of all these medications, but a preliminary evaluation may well be in order.

As an internist, I shall not discuss treatment of the psychotic or the extremely disturbed patient. But such exclusions still leave me an almost limitless number of patients to talk about. One approach to the topic is to classify the drugs according to their methods of action. There are four groups: (1) those used primarily for their effect upon mood, (2) those whose primary effect is physiologic, (3) those that are directed at somatic symptoms of emotional origin and (4) placebos.

DRUGS AFFECTING MOOD

The drugs affecting mood can be subdivided into sedatives and stimulants. Sedatives, or those designed to reduce tensions, fears and anxieties, have been used in some form from the start of recorded history. Aside from alcohol—which fails in this regard as often as it succeeds—the drugs used most widely for this purpose are the barbiturates. Their continued popularity over a half-century attests to their value. They are far from ideal, however, and certain facts about them should be borne in mind. The barbiturates do not cure anxiety, and unless the underlying cause is self-limited, it must be found and removed, for the alternative is an infinite prolongation of depressant drug-taking. Habituation to barbiturates is not uncommon, and many believe that a true addiction can occur. Some individuals may take enough barbiturates to feel uncomfortably drowsy or dopy, without losing their anxiety. In others, the anxiety may abate, but at the cost of excessive depression.

Bromides have been used for a century. Perhaps they are now less frequently prescribed than are the barbiturates, but still they are rather widely used. Their sedative effect seems to be proportionate to the blood level of bromide. Thus, they are not particularly effective as soporifics when taken in a single dose at bedtime, but they do produce a sedative effect when they have been taken over a sufficient length of time and in sufficient quantities to produce an effective blood level. One of the greatest drawbacks of this type of medication is that one can produce too high a blood level and bromide intoxication—a potentially serious condition, especially if it is not recognized as such. I might also add that one of the earliest uses of bromide was as an anaphrodisiac.

Within the past year we have been given a new drug called meprobamate and sold under the trade names Miltown and Equanil. With the advent of these new drugs, someone seemed to feel that a new word was needed to describe their action. *Depressant* was too foreboding, and *sedative* was too commonplace. When one pharmaceutical house appropriated the term *tranquilizer,* its competitors had to look for another. One man has suggested *deturmoilizers* or *apatheticatory agents.* I find it hard to decide whether he is serious or joking, but at any rate his suggestions don't seem to be gaining any great popularity. Obviously the best solution was to go back to ancient Greek and to form a new word. Thus the term *ataraxic* has been born.

In reading the new medical literature and the advertisements, one must be careful to realize that

the ataraxics are sedatives. Such a one, then, is meprobamate. Launched in August, 1955—as seems to be proper these days—with a glowing report in COSMOPOLITAN, the drug shortly thereafter hit the prescription counter. I have prescribed it rather frequently since then, and I have been rather surprised at its effectiveness. It is by no means a panacea, and there are many people whom it fails to help. But on the other hand, many patients report its having given them remarkable relief from tension and anxiety, and having evoked an extremely gratifying degree of tranquility. This result usually occurs without significant drowsiness. Side effects are minimal and, to date, apparently not serious. One drawback which meprobamate shares with too many of our new medications is its relatively high cost—about 11c per tablet. It is also well to remember that our total experience with this drug is meager. We may find that the initial feeling of well-being that it produces cannot be long sustained, or that it is capable of producing undesirable late effects. Future experience will indicate its proper value.

Mood elevators have been used a much shorter time than have sedatives. The most widely used drugs in this category are the amphetamines. These act as stimulators and are sometimes helpful in relieving depressed states. Yet they have certain drawbacks. One is the possibility of overstimulation to the point of jitteriness and apprehension. To overcome this effect, we sometimes prescribe an amphetamine and a barbiturate together. I prefer to prescribe variable combinations depending upon circumstances, rather than to dispense the ready-made and commercially available combinations. Other drawbacks of the amphetamines include interference with sleep, sometimes even if administered relatively early in the day; possible elevation of blood pressure; and depression of appetite. For this last-named effect, I might mention, these drugs are widely used in anti-obesity regimens.

Two new mood elevators have recently become available, Meratran and Ritalin. I confess that my personal experience with them has been very limited, but other opinions that I have run across seem to coincide with mine—namely, that Meratran is not very effective, but that Ritalin shows promise.

DRUGS HAVING PRIMARILY A PHYSIOLOGIC EFFECT

This category is a purely artificial one, devised by myself. I have separated these medications from the ones used primarily for their effect on mood because they seem to have physiologic actions that benefit some emotional disturbances. In this group I include rauwolfia, chlorpromazine and azacyclonal (Frenquel).

Rauwolfia is a shrub that grows in India, and from its root we have been administering extracts to patients in this country for about four years. It may be given in the form of powdered whole root, as the alseroxylon fraction containing mixed alkaloids or as the specific alkaloid, reserpine. When given in comparable dosages, it is probable that all three produce nearly indistinguishable effects. Although rauwolfia had been used in India for many years in the treatment of insanity, it was first used in the treatment of hypertension when it was introduced into the United States by Dr. Wilkins. For that purpose, it has established itself as an extremely valuable drug, both when used singly and when used in combination with more potent antihypertensive agents. Apparently it exerts a slow, prolonged effect, chiefly upon the pressure-regulating centers in the hypothalamus. It often produces a beneficial bradycrotic and sedative effect. The latter property has been utilized in the field of psychiatry. It is my impression that the psychiatrists find rauwolfia more helpful in quieting their extremely disturbed patients than we general physicians do in improving the moods of our "nervous" ones. Thus rauwolfia is the opposite of meprobamate, which helps our "nervous" patients more than it helps the psychiatrists' psychotic ones. The psychiatrist tends to use large doses of rauwolfia in treating his agitated patients, often much larger than those we administer for hypertension, and ordinarily over shorter periods of time. Fortunately, it does not usually reduce a normal blood pressure to significantly hypotensive levels, although that may happen with parenteral administration of large doses. Rauwolfia does, however, have important side effects, some merely annoying and some quite important. Nasal stuffiness is probably the commonest, the others being vivid dreams, diarrhea and depression. The last of these may lead to a depressive psychosis, and must be guarded against. A pseudo-Parkinsonism can also be induced, which leaves after the medication is discontinued.

A second potent physiologic agent is chlorpromazine (Thorazine). This is a phenothiazine derivative, chemically related to the antihistaminic compounds, but with a more widespread pharmacologic effect. By direct action on the medullary centers, it suppresses nausea and vomiting, and it is used therapeutically for this anti-emetic effect. It also influences both divisions of the autonomic nervous system, lowers blood pressure and increases the heart rate. Its effect on behavior seems to be mediated through the diencephalic region of the brain. Chlorpromazine seems definitely to benefit certain psychotics, particularly the agitated, confused and manic patients, and it is sometimes given to them in rather large doses. It is less valuable in depressed patients. As with rauwolfia, we general physicians do not find chlorpromazine nearly so useful in treating the everyday "nervous" patient as the psychiatrist does in managing his extremely disturbed individual.

Chlorpromazine has certain toxic potentialities. Dizziness and faintness are related to blood pressure lowering. Somnolence, dry mouth, nasal stuff-

iness, pseudo-Parkinsonism, jaundice and allergic skin manifestations may occur. Chlorpromazine tends to potentiate the effect of opiates and barbiturates, and should be used cautiously in combination with any of them.

Another new product, Frenquel, is being advertised as an anti-hallucinatory, anti-confusion drug that neither sedates nor stimulates. It is the gamma isomer of Meratran, and I include it with the drugs having physiologic action because it has been shown to prevent and reverse the experimental hallucinatory state produced by LSD. I doubt that this medication will ever find wide usefulness, particularly in view of the fact that LSD, though an interesting experimental tool, seems to play no part in the production of schizophrenia clinically.

DRUGS DIRECTED AT SOMATIC SYMPTOMS OF EMOTIONAL ORIGIN

This, of course, is a very broad category. The practice of any general physician must include a high proportion of patients whose symptoms are primarily emotional in origin, and the drugs used for the purpose of allaying them are countless. Aspirin is in this category when we give it to a woman with a nervous headache. The antacid that we give to relieve the heartburn of functional hyperacidity is another example. Since there are almost innumerable remedies prescribed for headaches and gastrointestinal symptoms, I can scarcely expect in a paper such as this even to mention all of the drugs that are given for ailments of these two systems alone. Other common psychogenic complaints include tiredness, backache and other pains, itching, shortness of breath and frequency of urination. It is recognized that maximum benefit would accrue from curing the underlying emotional difficulty, but we all know that in many cases this is impractical or impossible. Under such circumstances, we do the next best thing and treat the symptom.

The results tend to be spotty. In some circumstances, they may be excellent, as when epinephrine is injected for emotionally induced asthma. In other instances, all drug therapy seems discouragingly valueless, as in the case of the psychogenic hyperventilator ("sighing breather"). There is a great likelihood that many of the drugs we use in the treatment of psychogenic symptoms are not really pharmacologically active, but fall into the category that I propose to discuss next.

PLACEBOS

Placebos—substances that are pharmacologically inert—are ordinarily used in one of two ways. In studying a new drug to determine its value, we alternately administer a placebo that is similar to it in appearance, and judge the value of the new preparation by comparing the results that ensue. This type of study has shown us that lactose has surprising versatility, for it sometimes seems not only to have produced the beneficial effects that had been expected from the drug being tested but also to have had a similar toxicity. Obviously, such findings demonstrate how powerful suggestion can be in therapy.

A placebo is also useful when a physician wants his patient to feel that something is being done to relieve him of his difficulties, but wants to be sure that the capsule he takes will do him no harm. Though we strongly resist the thought, it is likely that many of our personal therapeutic favorites work in this way, when they work at all. Their salutary effects may stem solely from the skill with which we administer them.

Perhaps this idea that I have been attempting to present isn't really worth mentioning. But it seems to me that it is worth bearing in mind, for there is a danger of our becoming so deeply impressed with the benefits our patients have derived from inactive medications that we may prescribe them for patients whom active and readily available drugs would help. There is also a possibility that drugs which are purported to be active, but in reality are placebos, may constitute a heavy and altogether unjustifiable burden for the patient. For the most part, I try to prescribe placebos which are not too costly for my patients. And, finally, I believe that in a discussion on drug therapy for the emotionally disturbed patient, it is most fitting that one pay tribute to the value of the placebo.

THYROID-UPTAKE SEMINARS AT OAK RIDGE

The Medical Division of the Oak Ridge Institute of Nuclear Studies has announced that it will present a series of thyroid-uptake seminars this winter and spring, to provide instruction in a standard method of calibrating the uptake of radioiodine by the thyroid.

These seminars are an outgrowth of a thyroid-uptake calibration program during which life-size half-body mannequins containing simulated thyroid glands with suitable amounts of "mock-iodine" (a radioactive barium-cesium mixture whose gamma emission spectrum closely resembles that of I^{131}) were sent about the United States and England for testing by approximately 300 scientists and physicians. The results of those tests were correlated by the Medical Division to determine the efficacy of the various testing methods.

Seminars 1 and 2, March 18-19 and April 15-16, are open to qualified physicians and physicists. Each of them is open to 30 persons, of whom not more than half may be physicists. Seminar 4, June 10-14, is open to technicians who work under the direction of physicians and who have attended Seminar 1 or 2.

The tuition fee is $25 for each seminar. Further information can be secured from Mr. William Busby, P. O. Box No. 117, Oak Ridge.

Results of Treatment of Carcinoma of the Breast in General Surgical Practice

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OTTUMWA

RESULTS IN THE surgical treatment of breast cancer lend themselves equally well to study by large and small medical centers, for the diagnosis can be made with certainty, the course in untreated breast cancer can be foretold, and the indications for and the methods of treatment have been relatively well standardized. Carcinoma of the breast is still the commonest cancer among women, accounting for 17,000 deaths annually in the United States.

A voluminous literature has accumulated since Halsted and Meyer[5] reported block dissection of the breast and axilla for treatment of cancer in 1894. Studies by Haagensen,[3] Adair,[2] Taylor,[7] Harrington[4] and others have indicated the results of treatment in large medical centers, and it is a natural inclination for surgeons to identify themselves with those great teachers in so far as the results of their own work are concerned. But such an alliance does not give any assurance of prognosis to the patient who elects to be treated in her own community. Rather, each surgeon should assess his own work in a similar fashion. Zellinger and Adie[10] reported on a series of cases operated upon in a small general hospital in New Rochelle, and stated in their summary that one of their objectives had been to stimulate other general surgeons to make such surveys. Thus we are reporting a series of 165 cases submitted to radical mastectomy consecutively over a period of 15 years. Ninety-eight were done five or more years ago and have been followed.

ANATOMY AND PATHOLOGY

The breast is a secretory gland with an abundant vascular and lymphatic supply allowing metastases to occur through both systems. There are five main lymphatic drainage spaces: axillary, interpectoral, internal mammary, transrectus (sheath) and supraclavicular. In general, lateral-half lesions are more likely to drain through the axillary, interpectoral and rectus pathways, and medial-half lesions are likely to drain through both axillary and internal mammary pathways. Vascular invasion with metastasis is not uncommon.

Numerous classifications of mammary cancer have been found useful in large teaching centers.[1] Most of them have either an anatomic or a cell-type basis. The terms used, however, merely describe different forms of adenocarcinoma and refer either to the cell characteristics of the tumor or to the protective reaction of the host. The pathologist could be of more service to the *clinical* surgeon if he stated merely that malignancy was present, said whether it was of the duct-cell or acinar type, and reported the grade of the lesion. All forms of invading adenocarcinoma are potentially fatal and should be treated vigorously in a standard fashion. There are, of course, other forms of malignancy besides adenocarcinomas — namely sarcomas, lymphomas and other rare tumors.

Cytologic and anatomic "activity" of the tumor are two factors affecting prognosis. By reviewing the grade and stage characteristics, we can simplify our later discussion.

CYTOLOGIC CHARACTERISTICS

Grade I: No invasion (*in situ* carcinoma)

Grade II: Invasion with more than 50 per cent of cells differentiated

Grade III: Invasion with less than 50 per cent of cells differentiated

Grade IV: Marked anaplasia and invasion with no differentiation

ANATOMIC CHARACTERISTICS

Stage I: Limited to the breast itself

Stage II: Breast carcinoma with movable small axillary nodes

Stage III: Breast carcinoma with fixed axillary metastases

Stage IV: Breast carcinoma, plus axillary metastases, plus distant metastases

INDICATIONS FOR SURGERY

Before proceeding to a discussion of the results of treatment in our series, it is in order that we present a résumé of indications for surgery. For the most part, we follow the thesis of Haagensen and Stout,[3] of Presbyterian Hospital, New York City, who have made an exhaustive study of the disease and have concluded that any patient who has a dominant lump in the breast and whose general physical condition will tolerate radical mastectomy should be subjected to it, unless there are any of the following categorical signs of inoperability:

CONTRAINDICATIONS FOR SURGERY

1. Extensive edema of more than one-third of the skin of the breast

2. Satellite nodules of the skin
3. Edema of the arm
4. Intercostal and parasternal nodules
5. Proved supraclavicular nodes
6. Carcinoma of the inflammatory type
7. Distant metastases
8. Any two of the following:
 (a) ulceration of the skin
 (b) skin edema of less than one-third of the breast
 (c) fixation of axillary nodes to skin or pectoral muscle
 (d) axillary nodes greater than 2.5 cm. in diameter known to contain tumor.

If radical treatment is instituted early, Harrington,[4] White[9] and others have shown that pregnancy and lactation are no longer to be regarded as contraindications.

Haagensen concludes that proper selection of cases for radical mastectomy is not an indication of timidity in the surgeon, but is evidence of his responsibility in the exercise of good surgical judgment.

OUR SERIES

Our 165 consecutive cases subjected to radical mastectomy over a 15-year period represent 37 per cent of the patients who presented themselves for biopsy of isolated lesions. Because one patient died postoperatively early in the series, there was a mortality rate of 0.6 per cent. The succeeding 141 cases have been managed without a death. Duct-cell adenocarcinoma has been the predominant pathology in the series, there having been only two sarcomas and two intracystic carcinomas. The series does include six cases of sloughing breast lesions in which we recognized before surgery that cure was impossible, but operated for the purpose of palliation. We feel that simple mastectomy has an extremely limited usefulness in the treatment of this disease.

An interesting feature in our series was the presence of bilateral cancer in two patients. In one woman, the second cancer developed two years after surgical treatment of the first one, and the second was of a completely different cell type. The patient has survived the second radical mastectomy for 13 years, and is clinically free from the disease. The second woman had what appeared to be two concurrent primary lesions—bilateral, symmetrical, lower-hemisphere carcinomas without clinical evidence of distant metastases.

As has been said, 98 cases were operated upon five or more years ago, and it is from them that we now draw certain findings. Ninety-six (98.4 per cent) have been followed to the present time or were followed to their death. We are deeply indebted to numerous general physicians for their diligence in presenting these women for follow-up studies. And we are indebted as well, to the Bureau of Vital Statistics, in some instances, for confirmation of the cause of death, but in our statistics, the survival rate is an absolute one, for it includes only *known* survivors clinically free of disease. The two cases lost to follow-up are presumed to have died of the disease, and all patients who died of intercurrent disease are regarded, for this purpose, as having died of breast cancer, even though death may have occurred in the fourth postoperative year and though there was no evidence of recurrence.

Grade of Tumor. The grade of each tumor, wherever possible, was reviewed by our pathologist for uniformity, and the series was found to contain only Grades II, III and IV lesions. No direct correlation can be found between the grade of disease and the prognosis, but it is interesting to note that among the women who survived for five years or more, there were only two who had had Grade III or IV lesions with local metastases at the time of surgery. Thus there was only 8 per cent survival among patients with high grade and high stage lesions. Fifty per cent of patients with Grade III or IV lesions without metastases survived five years.

Stage of Disease. In contrast with most of those in other series, 60 per cent of our patients had presented themselves for treatment in Stage I. This factor must be borne in mind later when one considers the overall survival rate. Six patients were in Stage III or IV at the time of surgery, and none of them survived five years.

Age of Patients. Carcinoma is a disease of the post-pubertal breast, and no authenticated case has been recorded as having begun before puberty. In our series, the age span was from 28 to 82 years, and most cases came to our attention during the fifth, sixth and seventh decades.

Sixteen of the 98 cases were in women 40 years of age or younger. Since only four of them had axillary metastases, it is evident that as a group they presented themselves for treatment quite promptly. Of those four, two survived for five years, and one survived ten years. In the Stage-I group, however, 11 of the 12 women survived five years, and the one who did not was the postoperative mortality. It can thus be seen, if one can credit the evidence to be found in this small group, that age in itself is not a factor in prognosis, but that stage of the disease seems to be.

Duration of the Disease. Many studies have been undertaken in an effort to correlate the duration of the disease with its stage and prognosis, but the evidence has thus far been inconclusive. Fifty-five per cent of our series appeared for treatment less than three months following discovery of the lesion. Yet the remaining 45 per cent waited sufficiently long to make six months the average for all cases. We are unable to find any correlation in our series between the duration of the lesion and survival following mastectomy. It is of interest to note that although one patient delayed seven years

from the time of her discovery of a Grade II lesion, and although she had a movable axillary metastases at the time of surgery, she has survived seven years without evidence of recurrence.

Survival Statistics. Of the 98 cases subjected to surgery more than five years ago, 59 were Stage I and 39 were Stage II, III or IV. Of the Stage I group, 49 survived five years, making the *survival* rate 83.4 per cent. One of those patients, however, developed a local recurrence in her fifth year, with the result that the *clinical-cure* rate is 81.4 per cent. Of the patients with Stage II, III or IV lesions, 16 of 39 (41.0 per cent) survived five years. The total survival rate is 65.0 per cent, but one must remember that 60 per cent of those patients were Stage I cases.

When the course of the disease is studied further, the picture is seen to change. Forty-nine patients could be followed for more than five years. Again, our figures are absolute—i.e., all patients of whom we lost track or who may have died from other causes are presumed to have died of a recurrence of breast cancer. Of the 33 women who had had surgery for Stage I lesions, 28 (84.8 per cent) survived five years, but only 20 (60.6 per cent) survived 10 years. Six of the eight patients who died during the second five-year term died of metastases. Of the 16 women who had had Stage II, III or IV lesions at the time of surgery, nine (56.2 per cent) survived five years, but only four (25 per cent) survived 10 years. The total overall 10-year survival rate is 48.9 per cent. A comparison of our results and those that have been reported from other hospitals is shown in Figure 3.

Local Recurrence. In this series, six patients developed local recurrences in the chest wall. Four recurrences appeared in the scar, and two as parasternal or intercostal nodules. These local recurrences (6 per cent) could justifiably be charged to the surgeon, as representing inadequate removal of the primary tumor. The remainder of the metastases occurred in the pleural space, lungs, skeletal system or brain.

PLAN OF TREATMENT

To obtain these results, we feel that a plan of treatment must be established, and that certain definite factors should be constant in it.

Diagnosis. All dominant lesions must be biopsied, except those from which a clear, straw-colored fluid can be emptied by aspiration and which remain empty upon repeated examinations. The type of surgical biopsy is a matter of personal choice. If the lesion measures less than 2 cm. in diameter, one can safely excise it. If it is larger, one should incise it. In a majority of instances, frozen sections are not essential to diagnosis, but the pathologist should always be present and prepared to furnish one if it should be required. If a definite diagnosis cannot be established even with frozen sections, no harm is done by interposing a delay of no more than four days for the preparation of paraffin sections.

Technic. In our series, the Halsted or Stewart incisions were used, with certain necessary modifications. The vertical component of any incision should not enter the axilla because of subsequent scarring. We believe that the most important factor is the incision of breast skin at least 5 cm. wide of the lesion in all directions, regardless of whether or not there may be subsequent difficulty in the closure of the defect. The skin flaps should be thin and should be carried to the mid-sternum medially, to the clavicle superiorly, to the latissimus dorsi border laterally and to the excision of the upper anterior rectus sheath inferiorly. Twenty-three per cent of our cases were closed by primary grafts—either by pedicles, including the opposite breast in medial-half lesions, or by split-thickness grafts.

The technic of the operation is a meticulous one and should be standardized so that traction on the breast can be avoided. It is designed to remove the tissue farthest from the primary lesion first. The axilla is exposed by division of the pectoralis major and minor muscles at the level of the cephalic vein, coracoid process and humeral tuberosity. The axillary sheath is opened by sharp dissection, and all vessels (including the subscapular) below the axillary vein are ligated and divided. The thoracodorsal and long thoracic nerves are preserved unless they are involved by tumor, but if they have been invaded, they are sacrificed regardless of the resultant deformity. The breast and axil-

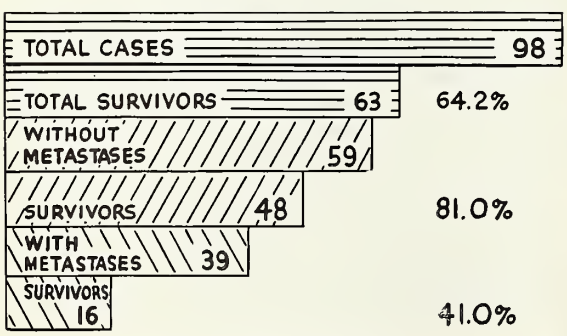


Figure 1. Five-year follow-up.

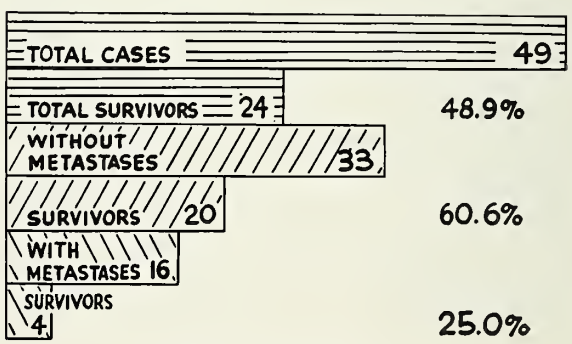


Figure 2. Ten-year follow-up.

lary structures are then removed "en bloc" from the chest wall.

Postoperatively, we use negative-suction catheters beneath the flaps to the exclusion of pressure dressings, and we feel that by doing so we have reduced the morbidity of wound closure. Suction is used until the daily accumulation of serum is 40 cc. or less. The catheters are then removed, and the dressing is maintained without pressure.

For the past two years, we have performed the more radical resection for medial and subareolar lesions that has been advocated by Wangensteen, Urban,[8] Sugarbaker[6] and others. It consists of the resection of the medial ends of the second, third and fourth ribs, along with the internal mammary vessels and nodes. Perhaps 30 to 45 minutes are thus added to the operating time, but the men with longest experience feel that the cure rate of medial-half lesions can thus be increased by as much as 15 per cent. The lengthening of the procedure does not add to its morbidity or mortality, but it does necessitate the use of intratracheal anesthesia and suction beneath the flaps to permit adequate re-ëxpansion of the lung.

Transfusion. By weighing sponges used during radical mastectomy, Wangensteen has proved that there is an average blood loss of 1100 cc. Routinely, we give up to 1000 cc. of whole blood during the operation, and feel that the morbidity is thus reduced.

X-ray Therapy. We feel that preoperative irradiation is of no value. Even though intensive irradiation produces a marked reduction in its clinical characteristics, a lesion which appears inoperable when first seen remains inoperable regardless of regression of the disease. Two such cases in this series have demonstrated the futility of radical mastectomy for these women. There is no definite proof that postoperative irradiation *per se* can sterilize cancer cells, and we feel that it is not indicated in Stage I cases. In Stages II, III and IV, however, we use it routinely to delay local recurrence or distant metastasis.

Sterilization. In our opinion castration should be limited to premenopausal women having Stage II, III or IV lesions.

Hormone Therapy. Administration of sex steroids has resulted in marked regression and palliation of metastatic disease in some instances for indefinite periods, but has produced only minimal or temporary regression in others. Our routine is as follows:

Pre-menopausal with recurrence—50 mg. testosterone three times weekly for the duration of life, with a maximum dose of 5000 mg.

Post-menopausal with recurrence—50 mg. testosterone three times weekly for bone metastases. For soft-tissue lesions, diethylstilbestrol, 15 mg. daily for a six-week period, then a two-week rest, and then a resumption of therapy. With the two-week rest period, we have had no instance of vaginal bleeding, but if one should occur, 50 mg. progesterone will aid in the slough. Afterwards, treatment with estrogen may be resumed.

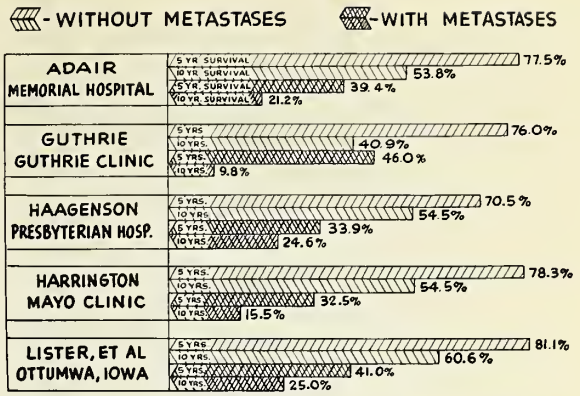


Figure 3. Comparable studies of survivals following surgery for cancer of the breast.

SUMMARY

1. We have reported a 98.6 per cent follow-up and a 65 per cent overall five-year survival rate for 98 cases of carcinoma of the breast submitted consecutively to radical mastectomy between 1941 and 1951.

2. We have reemphasized the fallacy of using five-year survival rates in estimating clinical cures.

3. We have emphasized the prognostic significance of cytologic activity and anatomic extent of disease.

4. The essentials of treatment for control of carcinoma of the breast have been reviewed.

5. We have presented evidence to indicate that results in the treatment of carcinoma of the breast in a small medical center can compare favorably with those secured at larger institutions, provided that proper selection of cases is made, and provided that meticulous surgical treatment is instituted.

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State University of Iowa College of Medicine

Clinical Pathologic Conference

October 3, 1956

SUMMARY OF CLINICAL FINDINGS

A 55-YEAR-OLD WHITE man was admitted to University Hospitals complaining of shortness of breath and cough which had begun when he was 22 years of age, immediately after his marriage and after his father's death. At about the same time, in addition, he had received orders to go to Europe for World War I service with the Red Cross. Exemption from military service had been granted him because of his religious objections to combat.

His condition was diagnosed as "asthma," and during the next 28 years intermittent relief followed a variety of medications and operative procedures upon his nose and sinuses. During the two years prior to his last admission, he had been treated in the Allergy Clinic at University Hospitals. Throughout the first year, potassium iodide, Norisodrine and house-dust desensitization provided him a considerable degree of relief. During the second, he was hospitalized on three occasions with severe shortness of breath, and each time ACTH brought about a complete remission. Two weeks after he quit taking the hormone, shortness of breath returned. At the time of his last admission, shortness of breath was pronounced, and coughing produced yellow sputum.

Family History: One brother had hay fever.

Past History: He had had three tonsillectomies, a submucous resection, several polypectomies and, at the age of 49, a left thoracic empyema.

Physical Examination: The patient's blood pressure was 150/100 mm. Hg., and his rectal temperature was 100.2° F. His pulse rate was 104 beats per minute, and his respirations were 28 per minute. He was sitting up, and his breathing—for which he had to use accessory muscles—was audible and characterized by prolonged expirations. His chest was barrel-shaped, and his diaphragm did not seem to move with respirations. The breath sounds were distant. Sibilant rhonchi were present on inspiration and expiration. His vital capacity was two liters. Nasal polyps were present in both ethmoid areas, but there were no other significant physical findings.

Laboratory Findings: Hemoglobin measured 13 Gm./100 ml., the red blood cell count was 4.75 million per cu. mm., and the white blood cell count was 19,000 per cu. mm. The differential count showed 20 per cent eosinophils, the urinalysis was negative, and a culture of the sputum grew diplococcus pneumoniae. A chest x-ray film was interpreted as showing no parenchymal disease. Tests for inhalant and food allergies were negative, except for moderate reactions to house dust and milk.

Course in Hospital: The patient was treated with potassium iodide, epinephrine, aminophyllin and penicillin. ACTH was withheld because of evidence suggesting a purulent bronchitis. On the sixth hospital day, the patient was found on the Hospital driveway directly below an eight-foot-high loading platform and his third-floor ward. Examination at that time revealed a rapid pulse, low blood pressure, severe bronchial obstruction and bilateral fractures of the os calci. He was conscious, but refused to say how the accident had occurred. In the next 36 hours, he remained in severe respiratory distress in spite of epinephrine, aminophyllin, ACTH, oxygen and ether. Thirty hours after the injury, he became very apprehensive and restless. There was no cough or sputum. A 100 mg. injection of Demerol was administered. Coma appeared, but wheezing continued. He remained in coma while respirations slowed progressively, and death occurred six hours later.

CLINICAL DISCUSSION

Dr. Paul M. Seebohm, Internal Medicine: Two years before the patient's last admission, he came to this hospital with a chief complaint of asthma. Did his shortness of breath indicate heart disease? There was no history of previous rheumatic fever to suggest rheumatic heart disease. There was no history of a previous cardiac diagnosis. He had had shortness of breath for 28 years, and at the time of his examination here, there were no signs of cardiac involvement. He reported that epinephrine had been effective in relieving his attacks.

Did he have pulmonary emphysema and asthmatic bronchitis? He had numerous eosinophils in his sputum and in his blood. Signs of hyperplastic sinusitis and nasal polyps were present. Antispasmodics provided him good relief, and the periods of remission after his severe attacks of shortness of breath suggested that his pulmonary function between attacks bordered on the normal. Also, at the onset of his difficulty, his attacks had been primarily nocturnal and episodic, rather than exertional. All of these suggested bronchial asthma.

Did he have pulmonary tuberculosis? He was reported to have had numerous chest x-rays, but they had shown no parenchymal disease. There had been no nocturnal sweating or fever.

Rather, it was decided that he had bronchial asthma. Actually, there was more family history to support that diagnosis than is mentioned in the protocol. Besides the brother who suffered from hay fever, his father is known to have had asthma and his daughter had had asthma in early childhood. When his attacks first began, as I said a moment ago, they were primarily nocturnal and episodic, and antispasmodic medication relieved his shortness of breath. During his prolonged remissions, he had apparently normal pulmonary function. Eosinophils were present in his sputum, and at one time there was a high percentage of them in his blood. There was a history of numerous polypectomies and other nasal surgery. All these findings were consistent with the diagnosis of bronchial asthma.

We next asked ourselves what *kind* of bronchial asthma he might have had for 25 years. It appeared that his attacks were perennial, they did not relate to any particular season, and in spite of numerous food-elimination trials, they could not be positively associated with the ingestion of anything specific. Skin tests had shown that he had a moderate sinus reaction to house dust, but that he was sensitive neither to other inhalants nor to foods, with the possible exception of milk. At the time of his admission to this Hospital, it was the examiner's impression that, rather than having extrinsic bronchial asthma, he had the so-called intrinsic or infective type of the disease. This has also been called idiopathic bronchial asthma, and there are a number of other names for it, including asthmatic bronchitis. Without going into a long dissertation on terminology, I hope you will permit me to call it intrinsic bronchial asthma.

Two years before the patient's death, it was decided that he had bronchial asthma, and a program of treatment was established. Before I undertake a detailed review of the therapy that was given him in this Hospital, it is worth while that I review the forms of treatment that he had had in the past. The measures had been of two types: (1) the so-called etiologic treatment (and as regards intrinsic asthma, the etiology is assumed rather than definitively determined) and (2) the symptomatic treatment.

On numerous occasions he had been subjected to food-elimination experiments, but no relationships could be established with any degree of certainty. Foods that it seemed possible might have precipitated attacks could not be made to provoke them. On the other hand, the patient's condition improved, sometimes, as foods were removed from his diet, but a recurrence of attacks did not follow their reintroduction. Thus, there was no consistency, as surely there would have been if one or more specific foods had been the causes of his difficulty.

He had had nasal operations on numerous occasions, and it might be well for us to review them. He had had a tonsillectomy as a child, and another at the age of 26, a few months after the onset of his asthma. His septum had been straightened at the same time. "A sinus operation" had been performed when he was 29, and another one when he was 30. The exact nature of those procedures was not discovered. Another tonsillectomy had been performed when he was 35. The polyps had been removed repeatedly during the ensuing 16 years, and windows had been placed in both maxillary sinuses when he was 39. He had numerous sinus irrigations and radium treatment. Following each of those operations he reported having had some temporary improvement. Sometimes it lasted several months, and on several occasions he was relatively free of asthma for several years.

Because the study made of him at this Hospital indicated that he had some reactivity to house dust, and because his condition, if not extrinsic, appeared at least to be a mixed type of intrinsic-extrinsic asthma, he was treated with injections of house dust and respiratory vaccine. During his first year under that form of management, he improved, but then he had a severe recurrence of his asthma.

Neurosis ought to be considered a possible etiology in cases such as this. This patient's asthma first appeared when he was 22 years old, following the death of his father, and shortly after his marriage and his receipt of orders to serve the Red Cross in France. That coincidence surely deserved psychiatric investigation, but so far as can be determined, no such study was made, either here or elsewhere.

The symptomatic treatment that had been given him before his admission to University Hospitals had consisted of antispasmodics and expectorants, and from time to time they had been quite helpful in alleviating minor attacks. In the year preceding his final admission, he had been treated with ACTH at this Hospital. In intramuscular doses of 100 mg. per day, it had been quite effective in relieving all of his asthmatic signs and symptoms. He had no sputum, wheezes or cough when he was receiving the maximum dosage of this hormone. Then, on three occasions, he went through a fairly regularized cycle. He received relief from 100 mg. of ACTH per day on about the fourth or fifth day of administration, and as the dosage was tapered down over a period of a week or ten days, he continued to maintain his remission. He then left the hospital and remained well for approximately two weeks. On one occasion, a three weeks' continuance of small doses at home sustained the remission. But then, after the hormone had been discontinued, his asthma returned. At times when it appeared that an infection had been superimposed upon the asthma, he had been given antibiotics, but even during his last admission, gross evidence of active pyogenic infection was lacking.

On his last admission, he showed a personality

change in that he demanded ACTH immediately, whereas on previous occasions he had always accepted whatever form of therapy was suggested to him. Because he had a leukocytosis and a slight elevation in temperature, and because his sputum was yellow and contained pneumococci, the treatment that was finally chosen for him consisted of antibiotics and symptomatic medication. When this decision was told to him at about 4 o'clock in the afternoon, he apparently accepted it, and apparently he was willing to accept our reasons for not giving him ACTH. But then, at three o'clock the next morning, the night watchman found him in the parking area below the loading platform at the east end of the hospital.

He was conscious, but in a state of shock. He was given emergency treatment in the surgical out-clinic and then admitted to the medical ward in severe status asthmaticus. We were never successful in discovering his reasons for leaving his room, and indeed he never was willing to tell us how he got from his bed to the place where the watchman found him. If he jumped from his third-story window, he must have landed on both feet in the driveway, for he succeeded in avoiding trauma to his skin. He had fractures which will be noted later, but there was no evidence that he fell forcibly upon any part of his body other than his feet. Another possibility was that he walked out of the Hospital onto the loading platform, and not realizing that there was a drop from there to the ground, he may have accidentally walked off the edge of the platform, fallen to the parking area, and sustained his injury in that manner. Though in the protocol it is said that the platform is eight feet off the ground, I have measured the distance and found it to be no more than about five feet.

The patient was in severe status asthmaticus, but we gave him ACTH, taking whatever risk was involved in the possibility of his having a bronchial infection. In addition, we gave him adrenalin and aminophyllin, but all agents seemed to be incapable of abating the respiratory distress. He would not cough voluntarily, in part because he had pain following his injury, and in part because he seemed to be severely depressed.

The next night, he became particularly restless and apprehensive, and after all medication had been tried, he was given 100 mg. of Demerol. It quieted his agitation and further suppressed his cough. His respiration slowed, his blood pressure fell and he died quietly about six hours later, despite a number of last-minute resuscitory measures such as ether, artificial respiration, adrenalin, and oil administered rectally.

I should like to ask Dr. Gillies to tell us the x-ray findings on this patient's chest and ankles, and to tell us how far he thinks this 160-pound man must have jumped or fallen in order to sustain the fractures that were found in his heels.

Dr. Carl Gillies, Radiology: The film of the patient's chest showed extensive emphysema. There were no heart changes. The shadow in the left apex was a healed primary complex, an incidental finding. The lateral views of both of the patient's heels showed fractures of the os calci. I think that a fall of five feet, particularly if the man was not expecting it, could produce fractures of this type. Many times we see people who have fallen from a step-ladder with similar results. The film of the sinuses showed thickening of the mucous membrane, with polypoid degeneration.

In my files, I have films of a patient who was known to have fallen three stories onto a cement driveway. That 33-year-old man had bones of very good density, as shown by the thickness of the cortex on the anterior surface of the tibia, and he was muscular. The three-story fall produced a fracture of one os calcis, with severe comminuted fractures of the lower ends of both tibias. That is, the tali were driven up into the lower tibias. That patient's injuries were much more severe than those sustained by the patient whom we have been discussing this afternoon, and it consequently is my opinion that today's subject probably walked off the edge of the loading platform, rather than fell or jumped onto the parking area from his third-story window.

Dr. Seebohm: Dr. Gillies, this man received ACTH on numerous occasions, and as you know, osteoporosis sometimes follows the frequent and continued administration of that hormone. In your opinion, were there any signs of osteoporosis in this patient's x-rays?

Dr. Gillies: For a patient of 55, I think the bones of both ankles were entirely normal in density.

Dr. Seebohm: If we sent this patient to you with fractured heels and asked for PA's and laterals of both feet, would you have some additional roentgenology to suggest?

Dr. Gillies: Only in the presence of symptoms. I'd want to make sure he didn't have a sore back, for if he did, he'd be likely to have sustained a compression fracture of the lumbar vertebra as well. If that were the case, however, I'm sure he would complain of it, and if he had no symptoms and did not complain of pain in the back on questioning, I wouldn't propose x-raying it just on suspicion.

Dr. Seebohm: Apparently the man whom we are discussing today did not complain of localized pain in the back, but as I have mentioned before, he did have considerable discomfort with respiration. It was not too clear whether that trouble was due to the severe bronchial occlusion, or to some internal injury that he had incurred in his fall.

Clinically, I think we should have to say that this man died because he was not getting enough oxygen. Indeed we reached that decision at the time. But I'm also quite confident that if he had not incurred an injury, he would not have died a respiratory death at that time. The day before his injury his asthma was not of the severest type, and

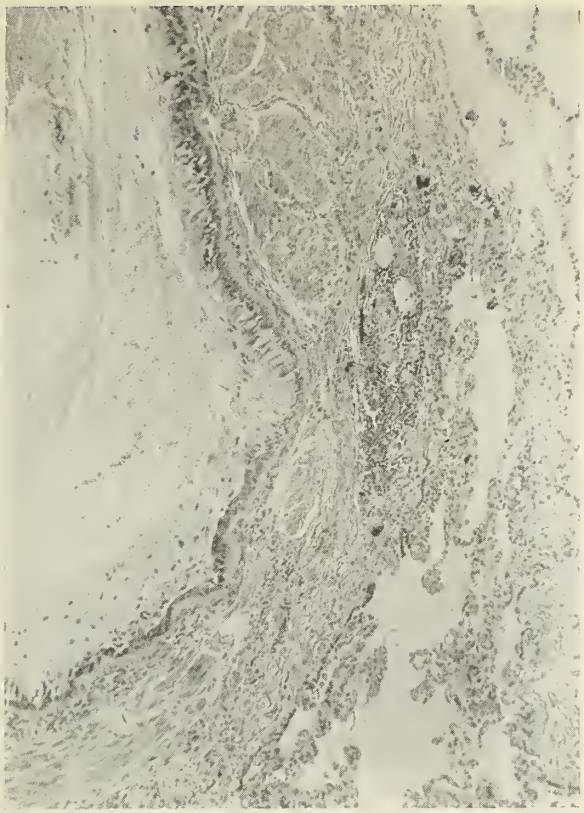


Figure 1. Photomicrograph of wall of 2-3 mm. bronchiole. The lumen is filled with mucus. There is hypersecretion of mucus. The basement membrane of the epithelium is thickened, and the smooth muscle is hypertrophied.



Figure 2. The lung was emphysematous. (The dots are within alveoli of normal size.) The tip of the arrow is in the extreme distal segment of a terminal bronchiole plugged with mucus.

from the time of his final admission, he had not had attacks so severe as to make us think they might kill him.

Dr. George R. Zimmerman, Pathology: At necropsy, this man had the anatomic findings associated with bronchial asthma, and he apparently had died in status asthmaticus.

As noted during life, the diameters of the patient's chest were strikingly increased, and his ribs were flared. Both of these features were better developed on the right side than on the left. The explanation lay in the numerous, dense, old adhesions of the left pleural cavity. These were the result of an empyema which he had had two years before his death. To some extent, the adhesions had limited the expansion of his left lung. Still, both lungs were voluminous. When removed from the body, they did not deflate, but maintained their intrathoracic shape and were, in fact, very much reminiscent of the lungs of a guinea pig killed by anaphylactic shock. The lower trachea and the bronchi were filled with thick, tenacious, gray-and-yellow mucus, and when the peripheral portions of the lung were cut, mucus exuded from even the very smallest bronchioles visible to the naked eye. The cut surface of the parenchyma had the coarsely spongy structure characteristic of diffuse emphysema. There were also numerous, superficial, emphysematous blebs.

Histologically, the smooth muscle of the bronchi and bronchioles was tremendously hypertrophied. The basement membrane of the lining epithelium was prominent because it was thickened and had undergone hyaline degeneration. Apparently, the apical portion of every lining cell was swollen with globules of mucus. In places, the epithelium of the bronchial mucosa had undergone metaplasia into low cuboidal cells, one to several layers deep. Such phenomena are frequent in this disease. The blood vessels of the lung were normal. There was none of the necrosis of arteriolar walls and eosinophilic neutrophilic infiltrates that are seen at times in bronchial asthma. Admixed with watery mucus in the lumina of the bronchi, were denser, deeply eosinophilic strands which evidently gave the product its tenacity. Plugs of mucus occluded even some of the most distal segments of the terminal bronchioles. There were only a few cells in the mucus, and these were mononuclear phagocytic cells and cast-off epithelial cells. There were no eosinophilic neutrophils in the mucus, and only a few in the bronchial walls. Nor was there any submucosal edema. The lack of demonstrable edema

may have been an artifact, but the second deviation from the otherwise classic histologic picture of bronchial asthma—i.e., the lack of eosinophilia—probably is attributable to the ACTH given to the patient during the last days of his life.

The notable dearth of eosinophilic neutrophils in the bronchial mucus in the lungs and in other organs was not accompanied by a corresponding lack of such cells in the bone marrow. In fact, the marrow showed low-grade hyperplasia of the eosinophilic granulocytic series—another characteristic of bronchial asthma that was recognized before the use of exogenous ACTH.

The diaphragm was four or five times normal thickness. Microscopically, it was very clear that this increase in mass was due solely to hypertrophy of the muscle fibrils—simple work hypertrophy.

The heart weighed 425 Gm.—a moderate degree of muscular hypertrophy considering the patient's size. The myocardial hypertrophy was both right- and left-sided. In the posterior part of the left ventricular wall, near the apex, there was a scar about 1.5 cm. in span, extending from the epicardium to within two or three millimeters of the endocardium. It was judged to be at least a year old, and may have been much older. Interestingly enough, the coronary arteries appeared perfectly normal.

The right adrenal gland contained an ovoid cortical adenoma measuring 1 x 0.5 cm. Although there are adrenal cortical changes secondary to ACTH therapy, I have been unable to find anything in the literature to suggest that there is a causal relationship between hormone therapy of this type and adrenal cortical adenomas. Furthermore, these tumors—and I use the word *tumors* in its broad sense—are found in from 5 to 30 per cent of autopsies of patients who have had no apparent adrenal abnormalities or other manifest hormonal disturbances.

The gallbladder contained no fluid bile, but instead was filled with grayish or colorless mucus and numerous stones. Several stones occluded the cystic duct. There were some old adhesions between the gallbladder and neighboring structures, indicating that, at one or more times, the patient had had a quite active inflammation. This finding may be significant in that some people attribute asthmatic attacks to foci of infection. There was no sign of active cholecystitis at autopsy.

An incidental—and accidental—finding was a submacroscopic adenocarcinoma of the prostate. Upon re-examination of the prostate and nearby pelvic structures and in the additional microscopic sections examined, no more carcinomatous tissue was found. Apparently the carcinoma was only a few millimeters in greatest size.

There was crepitation on movement, and discoloration and swelling of both ankles, and also a fracture of the body of the third lumbar vertebra.

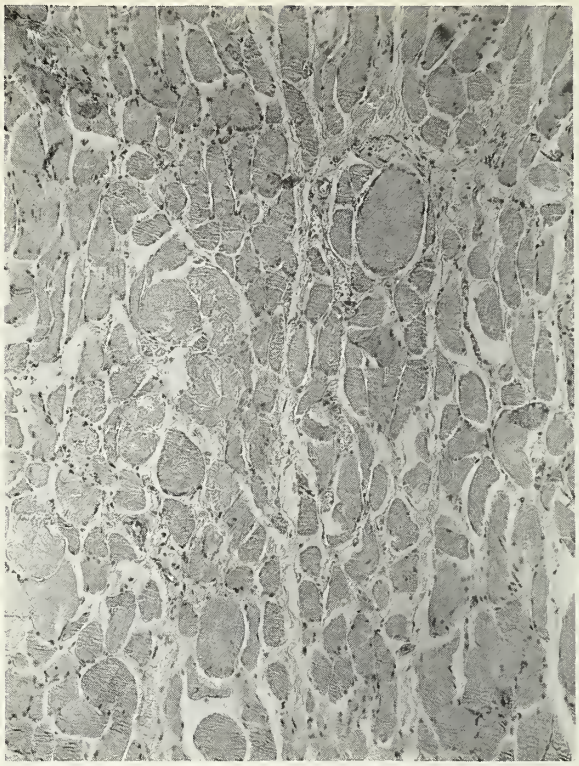


Figure 3. The smallest muscle fibrils in this photomicrograph are, by measurement, normal in size.

Associated with the latter was a hematoma, with extravasation of less that 500 cc. of blood.

Finally, there were minimal arteriosclerotic changes in the kidneys.

Death was due to asphyxia. Whether the accident instigated the fatal asthmatic attack, I do not know.

Dr. Seebohm: It is no more than infrequently that death occurs during a relatively uncomplicated attack of asthma and that we have an opportunity to see the asthmatic chest in the autopsy room. I think it is extremely important that we fix in our minds and remember what Dr. Zimmerman has reported that he found—hyper-secretion and plugging of the bronchial tree, rather than the nice, neat, clean physiologic phenomenon called bronchial spasm that you see in the anaphylaxis of the guinea pig. If we can remember that, when next we have occasion to prescribe medication in a case of bronchial asthma, we shall think more of trying to loosen and force out plugs, than of relaxing the nervous system and muscles.

In retrospect, I wonder whether most of us would not have withheld the Demerol or given a somewhat reduced dose. Demerol, being a cross between morphine and atropine, dries the secretion and suppresses respiration. Thus, though it was no doubt quite helpful in quieting the patient, it did not succeed at all in relieving the bronchial occlusion.

Dr. Mason, do you believe that this man fell three stories, or did he fall just five feet?

Dr. Edward E. Mason, Surgery: I think it's unlikely that he fell three stories, for he had no abrasions over his skin and apparently no bruise marks, and had fractures only of the os calci and the lumbar vertebra, but it bothers me a little that he should have gone into shock after falling no farther than five feet. Thus, I'm not completely satisfied with my own answer. If he fell no more than the shorter distance, perhaps I can in turn ask you whether he may have had poor adrenal response due to his previous hormone medication.

Incidentally, let me ask also whether there is any association between trauma and status asthmaticus. I've seen patients develop status asthmaticus during the period after a surgical procedure. Was there some relationship between respiratory difficulty and trauma, or was the anoxia the result of medication given in conjunction with surgery? Anesthesia is said to alleviate an asthmatic attack.

Dr. Seebohm: In answer to your first question, I can say that the patient received neither cortisone nor any of the adrenal steroids, but only ACTH, and ACTH should produce hypertrophy in the adrenal.

Dr. Kirkendall, do you think there is any hypoadrenalism two or three weeks after withdrawal of ACTH?

Dr. Walter M. Kirkendall, Internal Medicine: As a result of that therapy, a patient might have trouble responding to a stimulus.

Dr. Seebohm: In answer to Dr. Mason's second question, the one relating to shock and asthma with operations, I should say that the clinical evidence seen in allergy and asthmatic clinics certainly doesn't point to surgery as a cause for asthma. If anything, it's the other way around. Very often, surgery results in a prolonged remission in an asthmatic who may have had considerable recurring trouble. Ether anesthesia is often associated with such a prolonged remission. Thus, I suppose any generalization about postoperative asthma would have to take anesthesia into consideration. Two postoperative asthma patients whom I have seen received Prostigmin for abdominal distension and developed bronchial spasm.

This patient had had considerable ACTH, and prior to its administration his eosinophil differential was as high as 20 per cent, but at autopsy it was noted that he had eosinophils in his bone marrow but none in his tissue. I'd like to ask Dr. Henry Hamilton or Dr. Kirkendall what happens to eosinophils when one obtains the eosinopenic effect of ACTH. Are they locked in the bone marrow, or are they destroyed?

Dr. Henry E. Hamilton, Internal Medicine: Perhaps Dr. Kirkendall will give you an answer to that question, but first I should like to ask one of my own. What percentage of people with so-called intrinsic bronchial asthma have eosinophilia?

Dr. Seebohm: Sometime or other, almost 99 per cent.

Dr. Hamilton: Now as regards the extrinsic asthmatics. Do they usually have eosinophilia, too?

Dr. Seebohm: During the symptomatic phase, they usually do, but percentage-wise the level is not usually so high as among intrinsic asthmatics. Among the intrinsics, the range is likely to be 15 to 20 per cent, and among the extrinsic group closer to 10 per cent. Both groups, however, will show this response when they have a secondary pyogenic infection or fever.

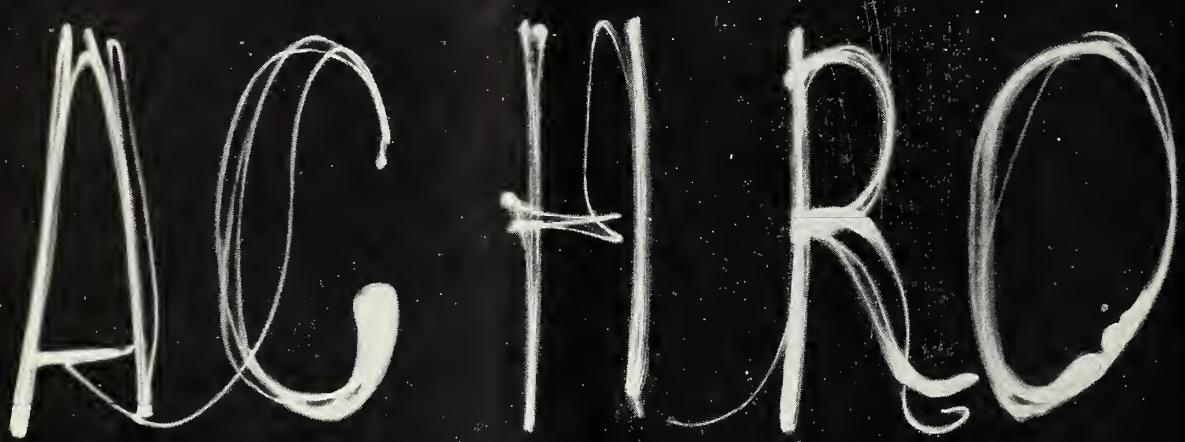
Dr. Seebohm: Dr. Kirkendall, what did you decide happened to the eosinophils when you used to destroy them?

Dr. Kirkendall: I don't have very much good information, but I do know that eosinophilia patients who are given a pyogenic agent have a prompt loss of circulating eosinophils. Few or none are in the blood after an hour or two. It has been thought that most of them are destroyed. It also has been assumed that the production of eosinophils is decreased during such a period. Stimulation of the ACTH-adrenal cortical system probably takes place to produce these effects, much as ACTH and other stimuli cause adrenal cortical activity, which in turn produces eosinopenia. Paradoxically, in adrenalectomized animals, fever will at times cause a similar loss of circulating eosinophils. Nevertheless, in persons with intact adrenals the eosinopenia following fever (and other stimuli) is probably due to a premature breakdown of eosinophils in the peripheral blood and to a decrease in the production of eosinophils in the bone marrow.

Dr. Zimmerman: There are a number of theories about what happens to the circulating eosinophils in, for example, the Thorn test, in which they disappear in three or four hours. One of the earlier ideas was that they were sequestered in the spleen. But the Thorn test is not significantly altered by splenectomy. Another possibility was that they were sequestered in other organs, and in one study the eosinophil counts on blood from the right side of the heart were compared with those on blood from the left side of the heart. After ACTH, the eosinophil count was lower in the blood from the left side. However, that doesn't necessarily mean that the eosinophils were sequestered in the lung, for *in vitro* studies in which ACTH is introduced directly into the blood show a diminution in the eosinophil count greater than that of normal blood over an identical length of time. Thus, apparently, there is actually some lysis. This is also thought to be true of eosinophils in the tissues.

Dr. Seebohm: It seems to me that we can always suppose the existence of a lesion whenever this combination of events occurs and leads to the death of a patient. In retrospect, it is my personal opinion that prior to his fall, this patient could have been given ACTH along with the antibiotics without getting him into any difficulty with the

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secondary infection. The loss of host resistance consequent to steroid and ACTH therapy wouldn't have been severe enough. I say that now, but I didn't believe it at the time. Subsequent experience with this problem suggests that unless the patient has high fever, eosinophilia and purulent infection, he can safely be given steroids, even though there may be some color to his sputum. After all, in spite of these evidences of infection, he did have 20 per cent eosinophils, as the differential count showed. I also think we probably underestimated his state of mental unrest at the time when we decided to withhold ACTH. It now seems fair to assume that he got up and walked out of the hospital because he had become disgusted with his management.

I think that the Demerol hastened his demise, but the downhill course had been set before he received it, in that he was not responding to any of our efforts to produce expectoration and relief of the bronchial obstruction. I doubt very much that our not using it would have facilitated his recovery in any important degree.

SUMMARY OF NECROPSY FINDINGS

Dr. Zimmerman: The patient's lungs were emphysematous, the diameters of the thoracic cage were accordingly increased, and the muscle of the diaphragm was greatly hypertrophied. The lower trachea, the bronchi and the bronchioles were occluded by extremely tenacious mucus. Microscopically, the smooth bronchial musculature was hypertrophied, the basement membrane of the lining epithelium was thickened and hyalinized, and there was increased secretion of mucus. There was increased secretion of mucus. There was no increase in the numbers of eosinophilic polymorphonuclear leukocytes, either in the mucus or in the bronchial and bronchiolar walls. Yet there was mild hyperplasia of the eosinophilic cell series of the bone marrow. The body of the third lumbar vertebra was recently fractured, and there was a moderate-size retroperitoneal hematoma on the right. In addition, there were recent fractures of the tarsal bones on both sides.

The cystic duct was occluded by several stones, and the gallbladder was filled with numerous other stones and by gray mucus. It contained no fluid bile. There were numerous old adhesions between the gallbladder and nearby structures.

The left ventricular myocardium was mildly hypertrophied. In the posterior wall of the left ventricle, near the apex, was a healed myocardial infarct. The coronary arteries appeared normal.

A small cortical adenoma was found in the right adrenal gland. A microscopic adenocarcinoma of the prostate was included in the sections of that organ. The kidneys showed moderate arteriosclerotic changes.

NECROPSY DIAGNOSES

1. Bronchial asthma (status asthmaticus)
2. Pulmonary emphysema
3. Compression fracture, recent, of body of third lumbar vertebra, with retroperitoneal hematoma
4. Fractures of tarsal bones, bilateral, recent
5. Healed infarct of left ventricular myocardium
6. Hydrops of gallbladder due to obstruction of cystic duct by gallstones
7. Adenocarcinoma of prostate, microscopic
8. Cortical adenoma of right adrenal gland
9. Arteriosclerotic changes of kidneys

Coming Meetings

In State

Jan. 16	**Gastroenterology for GP's.** SUI, Iowa City
Feb. 20-23	**Refresher Course for G-P's.** SUI College of Medicine, Iowa City
Feb. 26-28	**Annual Meeting, Sioux Valley Medical Association.** Hotel Sheraton-Martin, Sioux City

Out of State

Jan. 1-18	**Pain Syndromes; Diagnosis & Treatment by Regional Block.** U. of Pennsylvania, Philadelphia
Jan. 3-4	**Alabama Academy of General Practice Seminar.** Birmingham
Jan. 3-5	**Urology for General Practitioners.** U. of Minnesota Center for Continuation Study, Minneapolis
Jan. 7-9	**Minor Surgery.** Mt. Sinai Hospital, NYC
Jan. 7-9	**Dermatology for General Practitioners.** U. of Minnesota Center for Continuation Study, Minneapolis
Jan. 7-9	**Eighth Postgraduate Course in Medical Technology.** U. of Kansas Medical Center, Kansas City, Kansas
Jan. 7-11	**Physical and Occupational Therapy for Postpolios.** Warm Springs, Georgia
Jan. 7-11	**Etiology, Diagnosis & Treatment of Heart Diseases.** NYU, NYC
Jan. 7-11	**Anatomy for Orthopedists.** NYU, NYC
Jan. 7-18	**Introduction to Radiologic Safety,** NYU, NYC
Jan. 7-18	**Laryngology & Surgery of the Neck.** NYU, NYC
Jan. 7-18	**Cystoscopy.** Cook County Graduate School of Medicine, Chicago
Jan. 7-18	**Radiologic Safety for Industrial and Public Health Physicians.** NYU, NYC
Jan. 7-Feb. 1	**Basic Course in Radioisotopes.** Oak Ridge, Tennessee
Jan. 10-12	**Cancer Seminar, Arizona Division of the American Cancer Society.** Paradise Inn, Phoenix
Jan. 10-12	**Seminar in Clinical Medicine.** Albany Medical College, Albany
Jan. 10-12	**Fluid and Electrolyte Balance.** Tufts University, Boston
Jan. 14-15	**Pulmonary Diseases.** U. of Kansas Medical Center, Kansas City, Kansas

Jan. 14-18	**Neuro-ophthalmology.** NYU, NYC
Jan. 14-18	**Postgraduate Course, American College of Chest Physicians.** Vanderbilt University, Nashville
Jan. 14-18	**Elementary Electrocardiography.** Mt. Sinai Hospital, NYC
Jan. 14-18	**Advanced Electrocardiography.** Mt. Sinai Hospital, NYC
Jan. 14-18	**Seminar in Dermatology & Syphilology for Non-dermatologists.** NYU, NYC
Jan. 14-18	**Diagnosis and Treatment of Peripheral Nerve Injuries.** NYU, NYC
Jan. 14-18	**Refresher Course in Basic Urology.** NYU, NYC
Jan. 14-19	**Diseases of Parasympathetics and Sympathetics.** NYU, NYC
Jan. 14-19	**General Practice Review.** U. of Colorado Medical Center, Denver
Jan. 14-25	**Basic Principles in General Surgery.** Cook County Graduate School of Medicine, Chicago
Jan. 14-25	**Pediatrics Refresher Course.** NYU, NYC
Jan. 16-17	**Endocrine Disease.** University of Buffalo, Buffalo
Jan. 16-17	**Gastroenterology.** Kansas U. Medical Center, Kansas City, Kansas
Jan. 16-18	**Sectional Meeting, American College of Surgeons.** San Juan, Puerto Rico
Jan. 17-19	**Obstetrics & Gynecology.** U. of Nebraska College of Medicine, Omaha
Jan. 21-22	**Use of Isotopes in Medicine.** City of Hope, Duarte, California
Jan. 21-22	**Pulmonary Function.** U. of Indiana, Indianapolis
Jan. 21-23	**Pediatrics.** U. of Michigan, Ann Arbor
Jan. 21-24	**Surgery.** U. of Kansas Medical Center, Kansas City, Kansas
Jan. 21-25	**Clinical Bronchoscopy.** Cook County Graduate School of Medicine, Chicago
Jan. 21-Feb. 1	**Cystoscopy.** Cook County Graduate School of Medicine, Chicago
Jan. 21-Feb. 2	**Cancer Therapy.** NYU, NYC
Jan. 24-26	**Obstetrics.** U. of Michigan, Ann Arbor
Jan. 26-31	**Annual Meeting, American Academy of Orthopedic Surgeons.** Palmer House, Chicago
Jan. 28-Feb. 8	**Medicine.** Mt. Sinai Hospital, NYC
Jan. 28-Feb. 8	**Endaural Surgery.** NYU, NYC
Jan. 28-Feb. 8	**Occupational Radiation Problems.** Taft Sanitary Engineering Center, Cincinnati
Jan. 28-Feb. 8	**Surgical Technic.** Cook County Graduate School of Medicine, Chicago
Jan. 28-Feb. 9	**Diagnosis & Treatment of Fractures & Dislocations.** NYU, NYC
Jan. 30-Feb. 1	**Postgraduate Course, American Diabetes Association.** Ohio State University College of Medicine, Columbus
Jan. 31-Feb. 2	**Emergency Surgery for General Practitioners.** U. of Minnesota Center for Continuation Study, Minneapolis
Feb. 1-3	**Allergy.** Hotel Statler, Los Angeles
Feb. 1-21	**Pain Syndromes; Diagnosis & Treatment by Regional Block.** U. of Penna., Philadelphia
Feb. 1-28	**Diseases of the Chest (Columbia University).** Bellevue Hospital, NYC
Feb. 2-15	**Cystoscopy.** Cook County Graduate School of Medicine, Chicago
Feb. 4-5	**Hematology.** City of Hope, Duarte, California
Feb. 4-6	**Etiology, Diagnosis & Treatment of Heart Disease.** NYU, NYC
Feb. 4-7	**Sectional Meeting, American College of Surgeons.** New Orleans
Feb. 4-8	**Vaginal Approach to Pelvic Surgery.** Cook County Graduate School of Medicine, Chicago
Feb. 4-9	**Pediatric Orthopedics.** Tulane University, New Orleans.
Feb. 4-9	**Management of Mass Casualties.** Walter Reed Army Medical Center, Washington, D. C.
Feb. 4-15	**Diagnostic X-ray.** Cook County Graduate School of Medicine, Chicago
Feb. 4-15	**Serology of Syphilis.** V-D Research Laboratory, Chamblee, Georgia
Feb. 4-Mar. 1	**Basic Course in Radioisotopes.** Oak Ridge Institute of Nuclear Studies
Feb. 4-Mar. 1	**Thyroid Disease & Use of Radioactive Iodine (Harvard U.).** Massachusetts General and Beth Israel Hospitals, Boston
Feb. 5-14	**Obstetrics.** Cook County Graduate School of Medicine, Chicago
Feb. 6-7	**Varicose Veins.** Cook County Graduate School of Medicine, Chicago
Feb. 6-7	**General Practice.** Bunts Institute, Cleveland
Feb. 7	**Arthritis Symposium.** U. of Nebr. College of Medicine, Omaha
Feb. 7-9	**Diabetes.** Tufts University Medical School, Boston
Feb. 7-9	**Cardiovascular Diseases.** Albany Medical College, Albany
Feb. 7-9	**Cardiovascular Diseases for G-P's.** U. of Minnesota Center for Continuation Study, Minneapolis
Feb. 8-9	**Hematology for G-P's.** U. of Nebr. College of Medicine, Omaha
Feb. 10-12	**53rd Congress on Medical Education & Licensure.** Palmer House, Chicago
Feb. 11-13	**Anesthesiology for G-P's.** U. of Minnesota Center for Continuation Study, Minneapolis
Feb. 11-14	**Dynamics of Metabolic Diseases.** Highland Alameda County Hospital, Oakland
Feb. 11-14	**Radiology and Radioactive Isotopes.** Kansas University Medical Center, Kansas City, Kansas
Feb. 11-15	**General Surgery.** Cook County Graduate School of Medicine, Chicago
Feb. 11-16	**Laryngoscopy, Voice Rehabilitation & Audiology.** Mt. Sinai Hospital, NYC
Feb. 11-16	**Neurology for G-P's & Specialists.** U. of Minnesota Center for Continuation Study, Minneapolis
Feb. 11-22	**Surgical Technic.** Cook County Graduate School of Medicine, Chicago
Feb. 11-22	**Office & Operative Gynecology.** Cook County Graduate School of Medicine, Chicago
Feb. 12	**Chicago Heart Association.** Palmer House, Chicago
Feb. 13-14	**First Illinois Congress on Maternal Care.** Hotel St. Nicholas, Springfield
Feb. 14-16	**Orthopedic Surgery.** Tufts University Medical School, Boston
Feb. 18-22	**Clinical Bronchoscopy.** Cook County Graduate School of Medicine, Chicago
Feb. 18-22	**Pathology & Physiology of Blood Dyscrasias (American College of Physicians & Washington University).** Wohl Hospital, St. Louis
Feb. 18-Mar. 1	**Cystoscopy.** Cook County Graduate School of Medicine, Chicago
Feb.22-Mar.21	**Laboratory Methods in Hematology.** Mt. Sinai Hospital, NYC
Feb. 25-27	**Auscultation of the Heart.** NYU, NYC
Feb. 25-Mar. 1	**Management of Mass Casualties.** Brooke Army Medical Center, San Antonio
Feb. 25-Mar. 1	**Endoscopy: Bronchoscopy & Laryngoscopy.** NYU, NYC
Feb. 25-Mar. 1	**Conference on Rehabilitation Centers.** Morrison Hotel, Chicago
Feb. 25-Mar. 1	**Postgraduate Course, American College of Chest Physicians.** Mark Hopkins Hotel, San Francisco
Feb. 25-Mar. 8	**General & Surgical Obstetrics.** Cook County Graduate School of Medicine, Chicago
Feb.25-Mar. 9	**Surgical Technic.** Cook County Graduate School of Medicine, Chicago
Feb. 27-28	**Otology, Rhinology, Laryngology, Maxillofacial Surgery, Bronchoscopy & Esophagoscopy.** Bunts Institute, Cleveland
Feb. 27-28	**Neurology.** Kansas University Medical Center, Kansas City, Kansas
Feb. 27-Mar. 5	**Centenary of Academy of Medicine of Cincinnati.** Music Hall, Cincinnati
Feb. 27-Mar. 25	**Endaural Otologic Surgery.** Northwestern University Medical School, Chicago
Feb. 28-Mar. 1	**Cardiac Roentgenology.** NYU, NYC
Feb. 28-Mar. 2	**Rehabilitation.** Tufts University School of Medicine, Boston
Feb. 28-Mar. 2	**Sectional Meeting, American College of Surgeons.** Seattle



HAPPY NEW YEAR!

Once again we have the privilege of wishing the members of the Iowa State Medical Society a Happy New Year!

For a very long time to come, all of us will look back upon 1956 as a year of noteworthy accomplishments for our Society, the greatest of which, of course, has been the settlement of our altercation with the hospitals. But additionally, through its various committees, the Society began or enlarged upon several long-term projects during 1956, and made hardly more than a good start at dealing with a very considerable number of new problems. Thus, rather than becoming relatively quiescent, now that the physician-hospital controversy has been settled, it must continue unabated in its service to member physicians and to the general public.

Iowa Blue Shield, the doctors' plan, disbursed in excess of $6,000,000 to member physicians during 1956, in payment for surgery and in-patient medical care rendered to subscribers. But the Blue Shield Board of Directors, in cooperation with the ISMS, is in the process of developing arrangements by means of which larger numbers of people can be covered, and more numerous services rendered to them. The issuance of "deductible" contracts within the next few months, and the transfer of medical services from Blue Cross to Blue Shield are expected, among other things, to encourage conservatism in the utilization of hospitals, thus making room for the prompt admission of the sorts of patients most in need of hospitalization.

COOPERATION WITH SUI

Together with the dean and faculty of the SUI College of Medicine, the State Society has engaged in a number of highly worthwhile projects throughout the past several years, and all of them are to be continued. More and more physicians each year have volunteered to act as preceptors for senior students, and the medical school faculty members have been enthusiastic over the benefits that the preceptees have derived from their brief introduction to private practice. Thus, it is evident that the program will continue to flourish. Senior Day, an annual occasion on which members of our Society and its Auxiliary visit the University and become acquainted with the upperclassmen and their wives and fiancees, has been similarly well received. And the Society has been expanding its financial service to medical students. Using the $10-per-year-per-member assessment voted by the ISMS House of Delegates in 1954, the ISMS Educational Fund makes loans to medical students, internes and residents, and requires that they pay interest only after they have begun practice. The Woman's Auxiliary has a similar fund from which it lends money to student nurses on the same terms.

In recent years it may have seemed that every issue of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY, rather than just the April one, has deserved to be called the "University Issue." We haven't in the least regretted that development. Rather, we have been happy to accept all of the papers that the faculty members at Iowa City have sent us for publication, not only because the materials they contain are excellent but also because their being offered to us has been evidence of an increasing cooperation between the College of Medicine and the Society. There has been no occasion for our choosing between University manuscripts and those submitted by private practitioners, for increasing advertising revenues have enabled us to enlarge the issues of the JOURNAL.

NEGOTIATIONS WITH OTHER AGENCIES

More and more situations are constantly arising in which committees of the Society must deal with government and with private non-profit groups. Shortly, a committee of the Society will no doubt be called upon for advice in the formulation of contracts between specialists and hospitals. When there are disagreements regarding fees for services rendered to "Medicare" eligibles, the Society's Committee on Medical Service is to act in an advisory capacity. And the headquarters staff is to do a great deal of the bookkeeping that the "Medicare" program involves.

The Subcommittee on Medical Service to the Indigent has already begun talks with representatives of the State Department of Public Welfare regarding the bill that will be proposed in this year's General Assembly to qualify Iowa recipients of "categorical" relief (old-age assistance, aid to dependent children and aid to the needy blind) for medical-care allotments. The Committee on Nursing Education and Service has begun to work with the Division of Vocational Rehabilitation of the State Department of Public Instruction on plans for using newly authorized federal money in training practical nurses. And the Subcommittee on Mental Health is cooperating with the Governor's Commission on a survey of Iowa's mental health needs and facilities.

The ISMS Committee on Public Health has received a request from the State Commissioner of Public Safety for help in curbing traffic injuries and fatalities. Among other things, the commissioner has asked that a physician be appointed in each of the 99 counties of the state to act as con-

sultant to the driver's license examiners. Specifically, those officers would like to have doctors of medicine review cases in which they refuse licenses because the applicants appear physically or mentally incompetent to drive cars.

PROJECTS TO BE REACTIVATED OR ENLARGED

The Subcommitte on Industrial Health, a year and a half ago, prepared a booklet of instructions and asked physicians to give copies of it to the industrial nurses under their supervision. At that time, a canvass was made of ISMS members, so that the Subcommittee might have an idea of how many doctors were engaged, either full or part-time, in occupational medicine. Though fewer than half of those who replied said they did any such work, and though most of those who said "Yes" estimated that they got no more than 5 per cent of their incomes from it, a majority expressed interest in the subject and anticipated that sooner or later they would become vitally concerned. The interest that has been subsequently shown in industrial health problems has reinforced that indication. Thus, since prophylaxis is always the best medicine, the Subcommittee on Industrial Health will attempt to work out means by which the problems that have beset industrial physicians in other states may be prevented from arising in Iowa.

For the improvement of public relations, the State Society prepared two leaflets for distribution to the public during the past year. One of them dealt with burns, and the other with accident prevention in the home. The latter was circulated by the members of the Iowa Pharmaceutical Association. Doctors of medicine, for the first time, had a display booth at the state teachers' convention in Des Moines last November, and similar exhibits are being planned for the cattle congress and some of the larger county fairs in the state. In addition, the Society is to help sponsor a science fair, an occasion at which high school physics, biology and chemistry students display projects that they have planned and worked out for themselves.

Free television time for medical programs has been somewhat hard to get, of late, in part because there has been a sharp increase in the number of competing public-interest offerings, and in part because sports telecasts have preempted large blocks of time. But still, the ISMS television programs have appeared each week on from five to seven Iowa stations and, in addition, on one station each in Milwaukee and St. Louis. It is expected that two additional Iowa stations and one in Omaha will begin airing them regularly within the next few weeks.

Liaison physicians in the councilor districts and in the counties have been appointed to help with two different projects. It is expected that they will aid the Subcommittee on Rural Health in physician placement, and in securing speakers for, and otherwise establishing close relations with, community groups that are interested in health problems. Besides, they are to act as spokesmen in answering questions and making press releases to newspapers and radio stations, thus reactivating the press relations code that was worked out two years ago.

THE ANNUAL MEETING

Plans are far advanced for the Annual Meeting of the Iowa State Medical Society, to be held at the Veterans Memorial Auditorium in Des Moines, April 28-May 1, 1957. A fine group of guest speakers has been engaged, and scientific and technical exhibits are being prepared. A new feature at this year's meeting will be a panel discussion of various phases of medical economics. On our desk calendars, all of us should promptly circle the annual meeting dates, and those of us who will need hotel reservations should circle another date—say, March 15—so that they may be reminded to secure accommodations sufficiently far in advance.

JUDGE NOT!

Dr. Thomas S. Szasz, a professor of psychiatry at the State University of New York, in an article that he wrote for the October issue of AMA Archives of Neurology and Psychiatry,* has asked physicians to abandon the use of the term *malingering* in their diagnoses. His reason is that it is no part of a doctor's job to pass moral judgments. That idea, it seems to us, makes very good sense.

The question of volition is ordinarily assigned importance, he points out, only when health is a question in military situations, in criminal cases, in insurance matters and in some civil lawsuits. When a doctor even so much as considers using the term, he vacates the role of physician and assumes that of referee. As long as he remains in his man's corner, he can be a true physician, able and willing to help him; but in the center of the ring, as the personification of the Rules of the Marquis of Queensberry, of the Selective Service System or of whatever other authority is assumed to have jurisdiction, he is very nearly incapable of helping him at all.

Dr. Szasz is not quibbling. Rather than advocating merely that doctors use another word of the same meaning, he wants them altogether to ignore the possibility that the patient may have an ulterior motive for reporting symptoms of illness.

Let's hope we are not indulging in wishful thinking when we suppose that doctors no longer regard mental illness as something that their patients can throw off at will, or hold their patients responsible for the psychosomatic, any more than for the physical, aspects of their more run-of-the-mine sicknesses. If a man says he is sick, there is almost a certainty that he is, in one way or another and in greater or lesser degree. Pure and simple, it is

* Szasz, T. S.: Malingering: diagnosis or social condemnation. AMA Arch. Neurol. & Psychiat., 76:432-443, (Oct.) 1956.

the doctor's task to help him regain his health, not the least significant part of which is his feeling of well-being.

The disgrace which still surrounds mental illness, Dr. Szasz believes, reflects the popular notion that psychotics are to be looked down upon as deserters—people who have shirked their familial, financial, civic and, perhaps, military duty. In most instances it is no less than the literal truth that they have escaped their responsibilities, but to assume that such was their deliberate intent and to condemn them for it is to discard the well demonstrated principle that man is the product of his heredity and his environment, and by no means is the master of his own destiny.

The doctor should avoid such judgments both because they are wrong and because he hinders himself by making them.

AVIATION MEDICINE PROGRESSES

Aviation medicine is about to assume the important position to which it is entitled because of the rapid advances in air transportation. In 1948 and 1949, The American Board of Preventive Medicine and Public Health became an entity. In 1950, the specialty of aviation medicine was recognized, and the title of the Board was changed to The American Board of Preventive Medicine. It now has three affiliates: The American Board of Public Health (1949), The American Board of Aviation Medicine (1953) and The American Board of Occupational Medicine (1955). One of the vice-chairmen of The American Board of Preventive Medicine, and aviation's representative in that body, is Maj. Gen. Otis O. Benson, Jr.

It is interesting to note that one Iowan, Dr. Walter L. Bierring, and two former Iowans, Dr. William P. Shepard and Dr. Ernest L. Stebbins, played a major role, along with Dr. Richard Boyd of U.S.P.H.S., in the establishment of the American Board of Aviation Medicine, in 1953.

The United States Air Force, it should be mentioned, is making its own contribution toward establishing aviation medicine as a full-fledged specialty, and in providing facilities for research in that field. At Brooks Air Force Base, at San Antonio, construction has been started on a new, 1,000-bed aeromedical center, to be completed in 1958 at a cost of $9,000,000. It will be the first U.S.A.F. hospital to utilize internes.

The first construction will provide for an academic building, flight medical laboratory, research laboratory, shops and supporting facilities. An altitude building and a research building will be started in 1957. Establishment of this single aeromedical center will permit the U.S.A.F. to conduct more extensive research into the medical aspects of supersonic flight problems and to provide greater aviation-medicine teaching facilities than are now available. Emphasis will be placed on means of protecting flyers at the high speeds and altitudes which they presently encounter and which are anticipated in the future.

PROFESSIONAL LIABILITY INSURANCE

In Iowa, no less than in other parts of the country, a great many physicians have been anxious to learn how best to insure themselves against the hazards of professional liability. Prior to the 1956 Annual Meeting of the Iowa State Medical Society, the Special Committee on Group Insurance had made a study of the entire problem. In its report to the House of Delegates of the State Society, the Committee recommended that group coverage should not be secured, for the present at least, and that it be given serious consideration only if a survey of the members of the Society showed a general demand for it.

As regards the amount of professional liability insurance that a physician should carry, the Committee reported: "The answer cannot be a uniform figure, but obviously depends upon the individual's assets and upon his type of practice. The opinion of experts is that $5,000/$15,000 or $10,000/$30,000 is hopelessly inadequate coverage nowadays. Recommended are $50,000/$150,000 to $300,000/$900,000, depending on the degree of potential hazard in the doctor's practice."

In general, at least, the recommendations of the Iowa State Medical Society's Special Committee on Group Insurance agree with that of the AMA on the subject of adequate coverage, but one company, through its Iowa representative, expressed strong disagreement with this point of view. That company, which issues a policy that is widely held in Iowa, has always served the medical profession loyally. Hence, the editors of the JOURNAL are glad to print the following remarks of that company's representative.

"The idea that the standard limits of $5,000/$15,000 or $10,000/$30,000 constitute inadequate coverage comes from reports secured from California, New York, Georgia and Oklahoma, where malpractice litigation has increased until it is a major hazard for doctors.

"One of the primary causes for the bad situation that exists in those states has been the issuance of what are called 'excess limit indemnities.'

"In the hundreds of cases which this company has handled in Iowa, no doctor has been forced to pay out any money from his own assets when he has been defended by the company's experienced attorneys. In a fairly recent case, though it was reported in J.A.M.A. that a verdict had been returned against two Iowa surgeons in the amount of $50,000, the plaintiff (patient) did not receive one cent, and all of the court costs were assessed against him. In another case in which considerable

publicity had attended the rendering of a large judgment for the plaintiff, the doctor involved had to pay out no money whatever, despite the fact that he carried no more than a standard-limit policy.

"Attorneys in malpractice suits always sue for large amounts, knowing that they can hope to get no more than a small fraction of what they ask for. For example, in a recent instance the plaintiff had sued for $130,000, but finally settled for $300.

"This company believes that defense is the most important factor in holding down the number of suits. In 1925, it had one suit for every 65 policyholders; in 1945, one for every 222 policyholders; and in 1955, with more policyholders than ever before in its history, one for every 227 policyholders. Its experience has run directly contrary to the trend that has been reported in various magazines. Though one 'expert' has said that in 400 judgments rendered between 1929 and 1953, the average award was $83,000, the average of 400 consecutive awards in cases in which this company participated (the last of them having been handed down on July 31, 1956), the average was $1,757.

"Further evidence of the success which this company has had in fighting malpractice suits is the fact that its premium charge has remained almost unchanged since 1929, although the costs of defending cases has increased.

"Prevention, of course, is the best solution for the problem of professional liability. That can be accomplished if the doctor will:

1. Keep accurate and permanent records
2. Keep abreast with the average practice of his locality, as the law requires
3. Avoid criticizing the work of other doctors
4. Avoid admissions against his own interest
5. Learn and observe his legal duty to his patient
6. Use x-ray as a diagnostic or confirmatory aid whenever it is standard practice to do so
7. Guarantee no results
8. Cooperate with the patient in securing the aid of consultants
9. Give proper notice of termination of services
10. Secure proper consent for surgery in each instance
11. Keep his relations with his patient strictly confidential
12. Avoid divulging that he has professional liability coverage
13. Refrain from unapproved or experimental procedures
14. Be courteous and tactful in his relations with his patient
15. Notify patients when he is to be away, and recommend a competent substitute
16. Give full, written instructions for the care of his patient and for the administration of medications
17. Secure proper authorization for autopsy
18. Have unprejudiced witnesses to his relations with patients, especially females, whenever possible
19. Discuss fees with patients before rendering services, especially when the fees are to be sizable
20. Postpone suits for fees until after the statute of limitations on malpractice suits has expired
21. Secure legal advice before serving as witness at a coroner's inquest.
22. Secure legal advice on how to render his assets relatively inaccessible to suits for damages
23. Avoid sterilization procedures except when medically indicated
24. Avoid dictating prescriptions by telephone
25. Keep all equipment in proper working order
26. Keep to the field in which he is fully qualified
27. Keep appointments
28. Give full instructions to assistants, and make certain that they are observed
29. Visit patients as frequently as is required for their proper care
30. Exercise due care as regards
 a. labelling of bottles and other containers
 b. close observation of casts
 c. periodic check of needles and other equipment
 d. requiring personal examination for commitment proceedings and other procedures."

AMA Seattle Clinical Session

Medical ethics, veterans' medical care, radioactive isotopes, continuance of the AMA interim session, hospitalization for patients with alcoholism and a report of the Committee on Medical Practices were among the wide variety of subjects acted upon by the House of Delegates at the American Medical Association's Tenth Clinical Meeting, held Nov. 27-30 in Seattle.

Dr. Edward M. Gans of Harlowton, Montana, was announced at the opening session Tuesday as the 1956 General Practitioner of the Year. Dr. Gans, who is 80 years old, has practiced medicine for 51 years and has been in the Harlowton area for the past 44 years.

Strongly condemning government intervention in medicine, Dr. Dwight H. Murray of Napa, Calif., AMA President, told the opening session that "the medical profession, along with business and industry, is caught between those who desire to promote sound government programs and those who desire even more intensely to perpetuate party politics. Unfortunately, in recent years a benevolent fed-

eral government appears more attractive to the voting public than the preservation of individual freedoms. Medicine must do its utmost to reverse this trend."

Total registration at the end of the third day of the meeting, with half a day still to go, had reached 5,191, including 2,738 practicing physicians and 2,453 residents, interns, medical students, nurses and guests.

MEDICAL ETHICS

The subject of greatest interest at Seattle was the proposed, ten-section revision of the Principles of Medical Ethics originally submitted at the June, 1956, Annual Meeting in Chicago, where final action was deferred until the Seattle session. The proposed short version of the Principles was resubmitted, with some changes based on suggestions received since last June by the Council on Constitution and By-Laws. The House of Delegates, however, decided to refer the matter back to the Council on Constitution and By-Laws for further study and consideration. The reference committee report adopted by the House included the following statements:

"Careful consideration was given to the Preamble and the ten sections of the proposed Principles. The Preamble and seven of the ten sections appear to be acceptable in their present form.

"Sections 6 and 7 were not acceptable as presented either to the group which appeared at the hearing or to your reference committee.

"Out of the general discussion the reference committee received the crystallized opinion that at least four areas needed more specific attention in Sections 6 and 7. These are:

"(1) Division of fees;

"(2) The dispensing of drugs and appliances;

"(3) The corporate practice of medicine;

"(4) Greater emphasis concerning the relationship between physicians and patients.

"In addition, the reference committee felt that the wording in Section 10 could be improved if amended to read as follows:

" 'The responsibilities of the physician extend not only to the individual but also to society, and deserve his interest and participation in activities which have as their objective the improvement of the health and welfare of the individual and the community.'

"In view of the above, your reference committee believes that the proposed Principles of Medical Ethics should be referred back to the Council on Constitution and By-Laws for further study and consideration of the above stated principles.

"In the short space of time at our disposal and in view of the importance of the subject, your reference committee did not deem it wise to attempt to phrase these concepts properly.

"We would also recommend that if possible this study be completed at least six weeks prior to the June session and that the new version be published in JAMA in order that all interested physicians might have an opportunity to comment thereon."

VETERANS' MEDICAL CARE

The House revised the AMA policy on veterans' medical care by endorsing in principle the following paragraph suggested by the Council on Medical Service:

"With respect to the provision of medical care and hospitalization benefits for veterans in Veterans Administration and other federal hospitals that new legislation be enacted limiting such care to veterans with peacetime or wartime service whose disabilities or diseases are service-incurred or aggravated."

This action eliminates the temporary exceptions which were made in the June, 1953, policy regarding wartime veterans who are unable to defray the expenses of necessary hospitalization for non-service-connected cases of tuberculosis or psychiatric neurological disorders. In making the policy change, the House approved this supplementary statement:

"We recognize the laws and administrative extensions of the law that are now in operation. We feel that under the circumstances it will be to the best interests of the public in general, and veterans in particular, if medical societies—county and state as well as national—develop committees to assist in guaranteeing VA hospital admission to service-connected cases. While the present law exists, we should help assure that veterans whose illness constitutes economic disaster will not be displaced by those suffering short-term remediable ills which, at the worst, constitute financial inconvenience."

In another action concerning veterans, the House passed two resolutions condemning as unlawful the Veterans Administration's practice of admitting patients who are covered by workman's compensation insurance or by private health insurance and rendering bills for the cost of their care. Both resolutions requested the AMA to take action to bring about a discontinuance of such practices by VA hospitals, and one of them instructed the Association Secretary to obtain from each state testimony or records of each known case that violates VA Reg. 6047-D1.

RADIOACTIVE ISOTOPES

The House rescinded the June, 1951, action which limited the hospital use of radium and radioactive isotopes to board-certified radiologists, by approving a new policy statement which says:

"(1) In any hospital in which a patient is to receive radium or the products of radium or artificially produced isotopes, there should be a duly appointed Committee on Radium and Artificially Produced Radioisotopes of the hospital professional staff. This committee should include, but not necessarily be limited to, the following qualified physicians: a radiologist, a surgeon, an internist, a

gynecologist, a urologist and a pathologist. This committee should have available such competent consultation of other physicians and scientific personnel as may be required by it. Where this is not practicable, the hospital staff should consult the nearest Committee on Radium and Artificially Produced Radioisotopes.

"(2) In any hospital, the use of radium or its products and artificially produced radioactive isotopes for diagnostic or therapeutic purposes shall be restricted to qualified physicians so judged by the Committee on Radium and Artificially Produced Radioisotopes of the professional staff to be adequately trained and competent in their particular use.

"(3) It is recommended that procurement, storage, dosimetry control and inventory of all radioactive isotopes for the use of the hospital staff and radiological safety control be centralized, and, where administratively possible, centralization be located in the Department of Radiology.

"(4) It is recommended that the Board of Trustees assign to the appropriate council or committee the continuous study of the problems of radiological safety control in the use of radium and its products and artificially produced radioactive isotopes for diagnostic or therapeutic purposes."

CLINICAL MEETINGS

Rejecting a resolution which recommended discontinuance of the interim sessions, or clinical meetings, the House adopted a reference committee report which said:

"We believe that the interim sessions should be continued because of the public relations value of these meetings to the Association and the educational value to physicians and the general public in the various geographical areas involved.

"It is the suggestion of the reference committee that maximum attention be given to these potential benefits in selecting a city for the interim meeting.

"It is our further recommendation that the Board of Trustees consider the advisability of holding an Interim Meeting of the House of Delegates in Chicago each November or December and an Interim Scientific Session in November or December of each year in different parts of the United States. The reference committee suggests that the views of the Board of Trustees in this regard be reported to the House of Delegates next June."

HOSPITALIZATION FOR ALCOHOLICS

To implement educational approaches to the problem of alcoholism, the House approved a statement submitted through the Board of Trustees by the Council on Mental Health and its Committee on Alcoholism. The House also recommended that the statement be brought to the attention of the Council on Medical Education and Hospitals, the Joint Commission on Accreditation of Hospitals and the American Hospital Association. It includes the following:

"The Council on Mental Health urges hospital administrators and the staffs of hospitals to look upon alcoholism as a medical problem and to admit patients who are alcoholics to their hospitals for treatment, such admission to be made after due examination, investigation and consideration of the individual patient. Chronic alcoholism should not be considered as an illness which bars admission to a hospital, but rather as qualification for admission when the patient requests such admission and is cooperative, and the attending physician's opinion and that of hospital personnel should be considered. The chronic alcoholic in an acute phase can be, and often is, a medical emergency."

COMMITTEE ON MEDICAL PRACTICES

In approving a progress report of the Committee on Medical Practices, the House amended one of its directives to read as follows in order to remove any legal objections:

"The AMA representatives on the Joint Commission on Accreditation of Hospitals be instructed to stimulate action by that body leading to the warning, provisional accreditation, or removal of accreditation of community or general hospitals which exclude or arbitrarily restrict hospital privileges for generalists as a class regardless of their individual professional competence where such policies adversely affect the quality of patient care rendered. Any action taken should be only after appeal to the Commission by the county medical society concerned."

The House also approved a recommendation by the Committee on Medical Practices that a study group be formed to consider the best background preparations for general practice, and it urged that such action be implemented as soon as practicable.

MISCELLANEOUS ACTIONS

Among many other actions on a wide variety of subjects, the House of Delegates also:

Urged the widest possible publication and distribution of Dr. Murray's *presidential address* at the opening session;

Pledged the full support of the Association's initiative and energy to President Eisenhower's *people-to-people program* as a means of promoting understanding, peace and progress;

Directed the Board of Trustees to continue its investigation of the practicability of developing a *statement of AMA policies* and to arrange for the periodic publication of revised versions of such a policy statement;

Commended the objectives of the American Association of *Medical Assistants* and its sincere desire to work closely with the medical profession in improving medical service and medical public relations;

Noted with pride the good work being done by the 74,348 members of the *Woman's Auxiliary,* as reported to the House by Mrs. Robert Flanders, President;

Directed the Councils on Pharmacy and Chemistry and on Foods and Nutrition to conduct a joint study of all presently available information concerning the *fluoridation of public water supplies* and to present a documented report of findings and recommendations at the December, 1957, meeting;

Urged all physicians to participate actively in the formulation of medical policy for *prepaid medical care plans* which are under physician direction or sponsorship;

Changed the By-laws to extend *service membership* to reserve officers on extended active duty with the defense forces and the U. S. Public Health Service;

Changed the By-laws relating to *transfer of membership* so that an active or associate member of the Association who moves his practice to another jurisdiction may continue his AMA membership by applying for membership in the constituent association in his new jurisdiction, subject to a two-year limit on approval of his application;

Changed the By-laws so that the *election of officers* may take place at any time on the fourth day of the annual session, instead of being restricted to the afternoon of that day;

Passed a resolution calling for the American Medical Association to join with the American Hospital Association and the American Institute of Architects in their proposed *study of hospital design and construction;*

Approved the principle of a voluntary reduction in the self-assigned *quota of interns* as printed in the 1956 handbook of the National Intern Matching Program; and

Instructed the Board of Trustees to accentuate cooperation between the American Medical Association and the American Bar Association to the end that a bill of the *Jenkins-Keogh* type be enacted at the next session of Congress.

FRACTURES AND TRAUMA

An intensive course on fractures and other trauma will be offered to all interested members of the medical profession by the Chicago Regional Committee on Trauma of the American College of Surgeons, April 10-13, at the John B. Murphy Auditorium, 50 East Erie Street, Chicago.

Subjects to be covered include bony trauma, soft-tissue trauma, vascular injuries, bone grafting, traction technic, industrial casualties, farm injuries, auto crash injuries, burns, amputations, head injuries and others. Lectures and demontrations will be conducted by distinguished surgeon-teachers from the Chicago area, all recognized as authorities in their fields. The course is to be under the direction of Dr. Sam Banks.

THE HUSH OF RETIREMENT

In no other of life's professions or occupations is the preparatory period so exacting, so rigorous, so expensive or so prolonged as in medicine. The young physician in the full hybrid vigor of early practice may, it is true, look forward to retirement as something remote which will take care of itself, if he is a provident type and if proper financial dividends accrue. The simple fact that mental training and preparation for the peace of an unoccupied mind is equally necessary, is but ill understood.

The hobbies of medical men are too often of a type which are too strenuous to be projected into the years of retirement, though golf, hunting and other physical pleasures may be enjoyed for a time. Furthermore, they do not fill the evening hours, and ultimately satiety dogs the heels of pleasure.

For those whose leisure hours were of the vigorous type and who have suddenly been arrested on the tide of life, the suspension of both work and physical pleasures leads to a frustrated, hopeless existence.

We are no longer educated in a way that permits us to develop sedentary cultural hobbies. We are becoming a nation of skilled artisans. There is in every man a skill hunger, a desire to do something better than his fellow man, and our whole system of education is leading to the training which develops skill. This is a fine preparation for the utilitarian breakfast of life, but an indigestible supper in the cultural evening. Skills are not enough!

On their retirement, most men feel a natural bent to return to the vineyards of their youth, but the specter of aging kindred, outstretched palms and strangers in the old chapel assuages that yearning. The desire to retire to a more salubrious climate is likewise a natural one. But you do not make new friends readily after 70, and into those whom you do make, you thrust your roots less deeply.

To those in the full vigor of life, cultural preparation for such a remote contingency as retirement may seem like dribbling tears into one's champagne. Yet, retirement should be prepared for, and not left to take care of itself. Every man should have a hobby, one which he developed in his youth and nurtured through his years of activity. It should encompass both physical and mental attributes; it should be something cultural and productive; it should be shared with friends; it should be independent of wealth and physical decrepitude; and it should be readily available.

Prepare for, and do not resent the advent of old age. It is a privilege denied to many.

—Adapted from an article by Dr. Lyon H. Appleby, of Vancouver, B. C., in SURGERY, GYNECOLOGY & OBSTETRICS, **94**: 628ff., (May) 1952.



Blue Cross
Blue Shield



Why Blue Shield Must Keep on Growing

Ever since the birth of the "Blues," the big news has been their astounding rate of growth. Blue Cross and Blue Shield have "hit the jackpot" in public acceptance, the former now being well past the 50,000,000 mark, and the latter expected to reach 40,000,000 before the end of 1957.

Occasionally one hears the suggestion that Blue Shield should attempt to stabilize its enrollment and relax its effort to cover an even larger cross-section of the population. But the demand for prepaid medical care is now almost universal, and those who have it are asking for broader coverage and better contracts.

Not only does Blue Shield's momentum of growth permit no turning back, but it has grown so big that the public interest in the Plan has made it a major item in America's program for social progress.

Blue Shield is essential to the best interests of both Medicine and the public. Why essential? First, because Blue Shield is a major factor in the nation's economy. Whereas installment buying creates a debt and *mortgages* the future, medical prepayment creates a credit for the patient and *protects* his future.

Again, Blue Shield's growth safeguards its actuarial base of operation as risks are spread ever more widely. The community and the doctors thus gain a surer protection against fluctuations in subscription rates and in payments to physicians.

A third benefit provided by Blue Shield's growth is the opportunity it provides for reducing operating costs per person enrolled. This helps the Plan to broaden its services or to raise its payments to doctors, or both.

Fourth, the greater the number of a doctor's patients who are covered by prepayment plans, the fewer there are who are likely to present a collection problem, and the fewer there are to whom he may be asked to provide free or part-pay service.

Medicine's most significant benefit from the growth of Blue Shield is the dominant place that the Doctors' Plan can continue to occupy in the voluntary health insurance movement. Were it not for Blue Shield, the medical profession would have no effective control over the basic economy of private practice.

THE JOURNAL *Book Shelf*



BOOKS RECEIVED

BONE STRUCTURE AND METABOLISM (Ciba Foundation Symposium Series), ed. by *G. E. W. Wolstenholme,* O.B.E., M.A., M.B., B.Ch., and *Cecilia M. O'Connor,* B.Sc. (Boston, Little, Brown & Company, 1956. $8.00).

PAPER ELECTROPHORESIS (Ciba Foundation Symposium Series), ed. by *G. E. W. Wolstenholme,* O.B.E., M.A., M.B., B.Ch., and *Elaine C. P. Millar* (Boston, Little, Brown & Company, 1956. $6.75).

YEAR BOOK OF OBSTETRICS & GYNECOLOGY (1956-57 Year Book Series), ed. by *J. P. Greenhill,* M.D. (Chicago, The Year Book Publishers, Inc., 1956. $6.75).

BOOK REVIEWS

THE CERVICAL SYNDROME, by *Ruth Jackson,* M.D. (Springfield, Illinois, Charles C Thomas, 1956. $4.75).

The author applies the term *cervical syndrome* to the group of signs and symptoms that result from implication of the cervical nerve roots in or about the intervertebral foramina. The term is perhaps useful because of its non-specificity and because it enables the author to describe several conditions under a common heading.

One chapter is devoted to the anatomy of the cervical spine, and in it the author pays special attention to the lateral intervertebral synovial joints and intervertebral foramina, and to the relationship of the cervical nerves to them. Attention is paid to the roentgenographic interpretation of the cervical spine in both flexion and extension. In the third chapter, the mechanism of cervical nerve root irritation is attended to, and there is a discussion of subluxation, foraminal spurs, cervical discs and other mechanical compressive factors. In her discussion of the role of the cervical disc, the author minimizes postero-lateral protrusion of the intervertebral disk as a clinical entity, and presents anatomic reasons for her conclusions. Persons who do cervical spine surgery will have difficulty in accepting her conclusions in this regard.

Chapter four considers etiology, and contains a discussion of sprain injuries, including whip-lash, abnormal laxness of joint structures, postural and occupational attitudes, degenerative changes, inflammatory conditions, and fractures and anomalies. Chapter five carries the reader through an outline of diagnosis and presents roentgenographic reproductions to illustrate subluxations. In the chapter on differential diagnosis, some of the author's tenets are perhaps too rigidly categorized, but the section in general is thought-provoking and informative. The concluding chapter on treatment is a practical one, and outlines accurately the author's management of patients suffering from the "cervical syndrome."

The book is of handy size, it is attractively printed, and it has a soft leather cover. It is one of the most useful of the volumes in the American Lecture Series. Dr. Jackson, an orthopedic surgeon, has been writing about the "cervical syndrome" at least since 1949, and is undoubtedly well qualified to present the orthopedic point of view on that subject. All of us who have occasion to encounter a "pain in the neck" will find useful information in the monograph.—*John T. Bakody,* M.D.

HISTAMINE (Ciba Foundation Symposium Series), ed. by *G. E. W. Wolstenholme,* O.B.E., M.A., M.B., B.Ch., and *Cecilia M. O'Connor,* B.Sc. (Boston, Little, Brown & Co., 1956. $9.00).

This volume is a transcript of proceedings at one of a series of symposia that the Ciba Foundation has sponsored. Within its 471 pages are documented lectures and discussions presented in England at a meeting of the British Physiological Society and the British Pharmacological Society. General topics such as "The Occurrence of Histamine in the Body," "The Release of Histamine" and "The Origin and Significance of Histamine in the Body" are discussed by several participants. World authorities in the field of histamine research give their opinions and conclusions. Discussions follow.

The field is rather a narrow one, and some of the articles are rather abstract, but one feels as he reads these pages that he is coming as near as is possible in this day and age to the fundamental truths about histamine. The discussions that follow some of the papers add a bit of spice.

The book would be well adapted for the needs of libraries in hospitals and other medical institutions. The allergist would be quite interested, and the gastroenterologist would be mildly interested by the material, but the book is not one that the general practitioner would be attracted to.—*Daniel A. Glomset,* M.D.

MANUAL OF HAND INJURIES, by *H. Minor Nichols,* M.D. (Chicago, The Year Book Publishers, Inc., 1956. $9.50).

Here, at last, is a much-needed manual dealing with the care of hand injuries. It is short, concise and well written, and it embodies the author's mature, personal experience in surgery of the hand.

The book is illustrated by means of many original drawings, photographs and x-rays, arranged in a most instructive manner. Here is a book which should be most useful to every surgeon who takes care of hand injuries.—*Julian M. Bruner,* M.D.

Practical Pediatric Dermatology, by *Morris Leider*, M.D. (St. Louis, C. V. Mosby Co., 1956. $10.50).

In his preface, the author nicely substantiates the need for such a book as this by presenting some interesting statistics. For example, he says that every seventh case admitted to a given pediatric hospital was a cutaneous condition (14.7 per cent).

Basic-science aspects of dermatology form the introduction to the volume. Then a discussion of principles of diagnosis logically follows. The chapter on diagnosis is made more valuable by the inclusion of several excellent differential tables.

Therapy is divided into two sub-sections. First, there is a general discussion of the principles of therapy, and second (printed on colored paper) is an annotated formulary of useful dermatologic preparations, including proprietary names in many instances.

There is one criticism that I am impelled to make. The terminology that the author uses in describing size and texture is frequently vague or virtually meaningless. Here are two samples: "the nutmeg-grater feel of the skin"; and "seed, match-head, pea or small nut size." Centimeter measurements of lesions would have been greatly preferable.

This new book will be very useful in the ready-reference library of any physician.—*M. E. Alberts*, M.D.

Clinical Unipolar Electrocardiography, Third Edition, by *Bernard S. Lipman*, M.D., and *Edward Massie*, M.D. (Chicago, The Year Book Publishers, Inc., 1956. $7.50).

Principles of Clinical Electrocardiography, by *Mervin J. Goldman*, M.D. (Los Altos, California, Lange Medical Publications, Inc., 1956. $4.50).

These two additions to the long parade of introductory volumes in the field of electrocardiography furnish an interesting contrast in presentation of subject matter.

The success of the Lipman-Massie manual is attested by the fact that this is the third edition of it to appear within five years. The text is compact, orthodox and well illustrated. Almost half of the book is occupied by a section of illustrative unipolar electrocardiograms, with emphasis on lesions now amenable to surgical correction.

Dr. Goldman's volume of 300 pages is lithographed, bound in cardboard and presented in outline form. Illustrations, both line drawings and reproductions of electrocardiograms, are abundant and of a quality that is unusual in a lithographed publication. The text is frankly addressed to the beginner in electrocardiography, but the more experienced worker will find much in it that will interest him, despite the how-to-do-it appearance of the volume.—*Herman J. Smith*, M.D.

The Year Book of Pediatrics (1956-1957 Year Book Series), ed. by *Sidney S. Gellis*, M.D. (Chicago, The Year Book Publishers, Inc., 1956. $6.75).

The series of year books in pediatrics has been continued in the same valuable manner as in past years. It is interesting to note the changing pattern of emphasis from year to year, as progress is made in the art and science of medicine.

The editorial remarks of various contributors add greatly to the abstracts that are presented. This yearly inventory of the pediatrics literature is a "must" for the busy pediatrician.—*M. E. Alberts*, M.D.

Pre- and Postoperative Care of the Pediatric Surgical Patient, ed. by *William B. Kiesewetter*, M.D. (Chicago, The Year Book Publishers, Inc., 1956. $7.00).

This outline prepared by members of the faculty of the University of Pittsburgh School of Medicine emphasizes the need for considering the pediatric surgical patient in a manner different from the adult. Primarily, it would seem, the book should serve as a guide for the surgeon who has had little experience in the care of young patients.

After a general discussion of pre- and postoperative care, the editor leads the reader into more specific considerations of the surgery of the various organ systems (abdominal, thoracic, urologic, ophthalmic, etc.). These sections, in turn, are subdivided into specific diagnostic categories, and for each of them there is an outline of the required studies, the elective studies, the differential considerations, the preoperative management, the operative objectives and methods, the postoperative management and the possible complications.

The content of the book is concise and quite adequate. Those who would gain from it most are the interne, the surgery or pediatrics resident physician and the "occasional pediatric surgeon."—*M. E. Alberts*, M.D.

Diseases of the Heart, Second Edition, by *Charles K. Friedberg*, M.D. (Philadelphia, W. B. Saunders Company, 1956. $18.00).

So rapidly has cardiology advanced in the seven years since the first edition of this work appeared that the book has had to be almost completely rewritten. The second edition is a massive volume of more than 1,100 double-columned pages.

The burgeoning field of cardiac surgery receives much attention in this new edition, because, as the author notes in his preface, the availability of surgical therapy imposes new responsibilities on the physician. The various devices for direct vision, intra-cardiac surgery are discussed. Graphic methods of examination are the subject of a new section in the edition, and discussions of angiocardiography, vectorcardiography and ballistocardiography are included.

Anticoagulant therapy in myocardial infarction, the pathophysiology of cardio-pulmonary disease, pulmonary function tests and the controversy over the role of lipids in the production of coronary atherosclerosis are among the current developments that are surveyed.

The book is comprehensive enough to be almost an encyclopedic reference work on the current status of a dynamically expanding field of medicine. It deserves a place in the working library of every physician who deals with heart disease in his practice.—*Herman J. Smith*, M.D.

Plan to attend the Annual Meeting of the Iowa State Medical Society, April 28-May 1, 1957, in Des Moines.

Iowa Academy of General Practice

SUI REFRESHER COURSE FOR GENERAL PRACTITIONERS

General practitioners who have not already made plans to attend the refresher course that is to be presented for them at the SUI College of Medicine, in Iowa City on February 20, 21, 22 and 23, should do so at once.

Twenty-one hours of Category I credit will be allowed for attendance at the entire meeting, and proportional credit will be granted to physicians who find it possible to attend no more than part time.

PROGRAM

Wednesday, February 20
Surgery

9:00 a.m. Address of Welcome—Dean Norman B. Nelson
Comments—Dr. Charles A. Nicoll, Panora, president of the IAGP
9:30 a.m. Management of Acute Ocular Injuries—Dr. A. E. Braley
10:00 a.m. Diagnostic Aids in the Evaluation of Low Back Pain—Dr. A. L. Sahs
10:30 a.m. Practical Test for Varicose Veins—Dr. R. T. Tidrick
11:15 a.m. The Immediate Management of Chest Injuries—Dr. Thomas H. Burford
11:45 a.m. Question and Answer Period
12:30 p.m. Luncheon
1:50 p.m. Medical Management of Peptic Ulcer—Dr. George H. M. Thornton
2:15 p.m. Surgical Management of Peptic Ulcer—Dr. E. S. Brintnall
2:40 p.m. Significance of Neck Pain—Dr. Carroll Larson
3:45 p.m. Laboratory Tests for Tissue Necrosis, a New Aid in Surgical Diagnosis—Dr. Edward E. Mason
4:15 p.m. Question and Answer Period

Thursday, February 21
Medicine

9:00 a.m. Arthritis as a Clinical Problem—Dr. W. D. Paul
9:30 a.m. Practical Approach to Problems of Fluid and Electrolyte Balance—Dr. Elmer L. DeGowin
10:00 a.m. Changing Concepts of Renal Disease—Dr. Robert M. Kark
10:45 a.m. Prevention, Diagnosis and Treatment of Pyelonephritis—Dr. Ian Maclean Smith
11:15 a.m. Allergic Complications From Antibiotic Therapy—Dr. R. G. Carney
11:45 a.m. Question and Answer Period
12:30 p.m. Luncheon
2:00 p.m. Current Status of Dietary and Hormonal Factors in Atherosclerosis—Dr. William E. Connor
2:30 p.m. Recent Advances in the Treatment of Renal Disease—Dr. Kark
3:00 p.m. The Selection of Patients for the Surgical Treatment of Cardiac Septal Defects—Dr. Ernest O. Theilen
3:45 p.m. The Use of the Tranquilizing Drugs in Medical Practice—Dr. Paul E. Huston

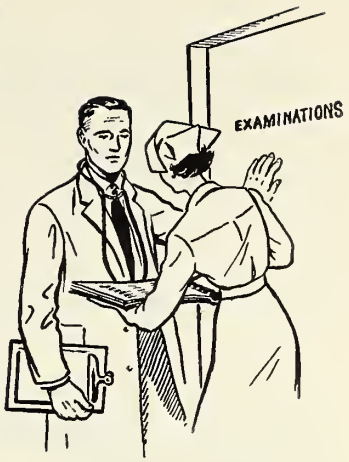
Friday, February 22
Obstetrics & Gynecology

9:00 a.m. Choice of Anesthetic Agents for Abdominal Surgery—Dr. Stuart C. Cullen
9:30 a.m. Indications for and Complications of Hysterectomy—Dr. J. H. Randall
10:00 a.m. Problems of the Prenatal Period—Dr. Charles S. Stevenson
10:45 a.m. When Should a Curettage Be Performed?—Dr. W. B. Goddard
11:15 a.m. The Significance of Hypertension During Pregnancy—Dr. R. O. Swann
11:45 a.m. Question and Answer Period
2:00 p.m. The Obstetrical Significance of a Contracted Pelvis—Dr. W. C. Keettel
2:30 p.m. Late Antepartum Bleeding—Dr. Stevenson
3:00 p.m. Management of the Undescended Testicle—Dr. Rubin H. Flocks
3:45 p.m. The Use of Nitrogen Mustard, Supervoltage Therapy and the Cobalt Bomb in Therapeutic Radiology—Dr. H. B. Elkins
4:15 p.m. Question and Answer Period

Saturday, February 23
Pediatrics

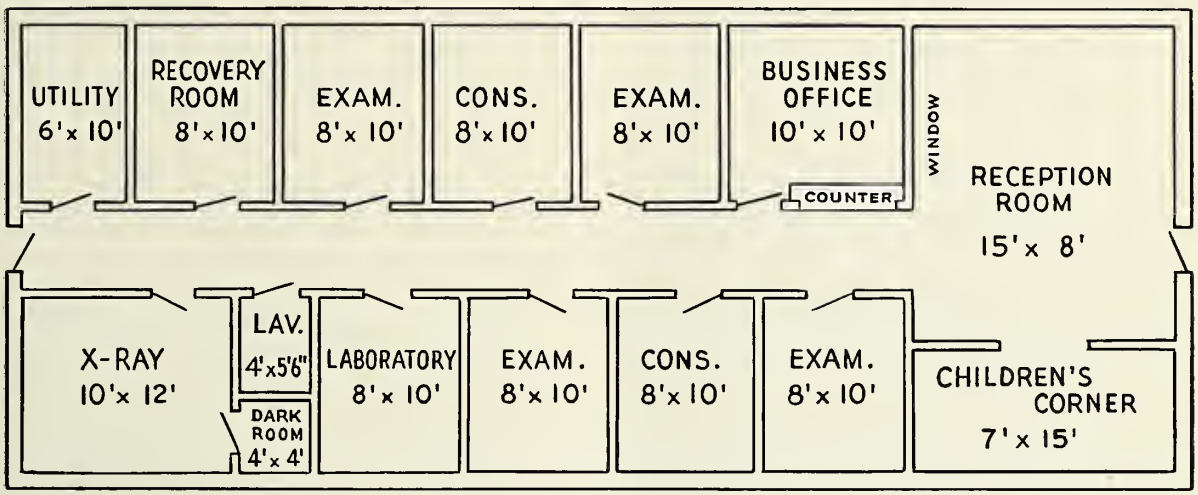
9:00 a.m. Cystic Fibrosis of the Pancreas—Dr. Charles D. May
9:30 a.m. Evaluation of Intelligence in Children—Dr. Paul Baer
10:00 a.m. Practical Points in Pediatric Radiology—Dr. Eugene VanEpps
10:45 a.m. Colic—Dr. George R. Barnes
11:15 a.m. Pediatric Problems of Prematurity—Dr. Robert G. Frazier
11:45 a.m. Question and Answer Period
1:00 p.m. Luncheon at Which Senior Medical Students Will Be Guests

THE DOCTOR'S BUSINESS



Sample Floor Plan for Two-Man Suite

MILLARD K. MILLS
WATERLOO



Comments:

1. This arrangement, in which there is a central hallway and the doctors' work areas are opposite one another, is one of the simplest and least expensive plans.

2. Future expansion could be achieved merely by adding to the rear of the building.

3. The reception room and children's corner together take up 375 square feet of space. Under certain circumstances, the reception area could be reduced so as to provide each doctor three examining rooms instead of two. Less waiting room space is necessary for the patients of certain sorts of specialists and of all sorts of physicians who are very careful about keeping to their appointment schedules.

4. In the business office, there is a window opening into the waiting room, so that the staff may greet patients as they enter, and a counter separating it from the corridor, so that conversations regarding payments may be conducted in private.

5. The auxiliary rooms are to the rear and equally accessible to both doctors.

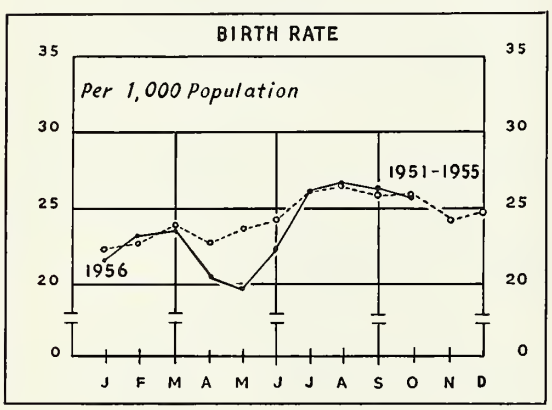
6. The major plumbing will be concentrated, since the laboratory and dark room are adjacent.

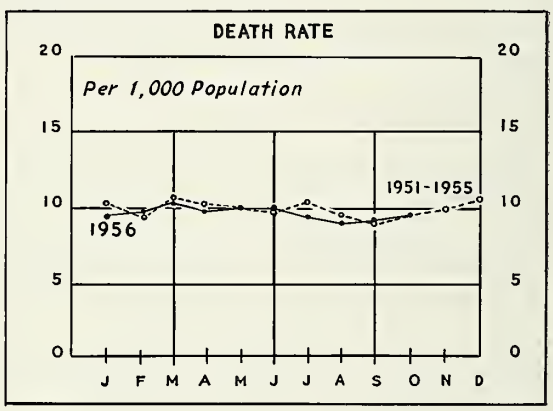
7. The size of the x-ray room will depend upon the size of the unit. The space indicated would house good-sized equipment.

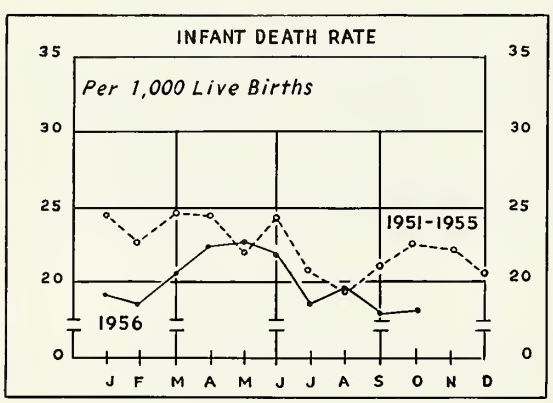
STATE DEPARTMENT OF HEALTH

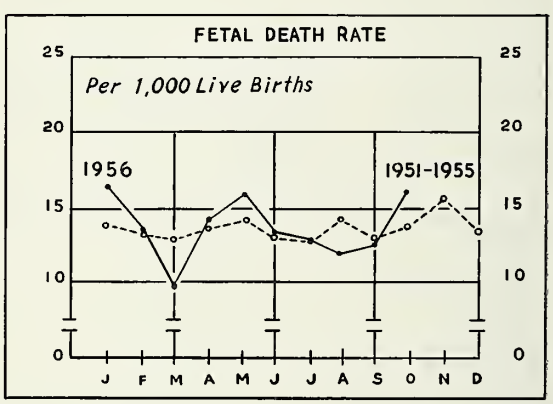
COMMISSIONER

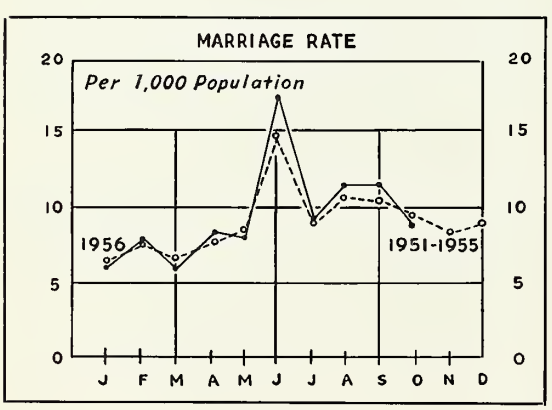
SUMMARY OF VITAL EVENTS

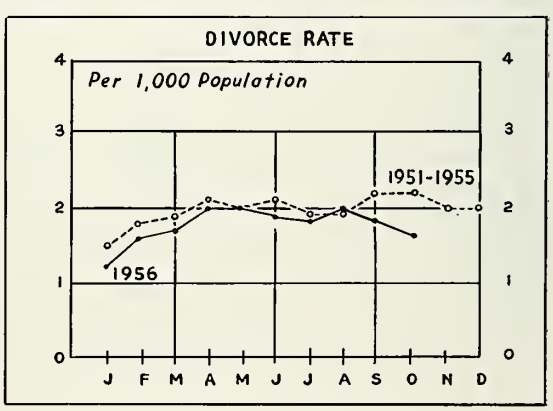












SUMMARY OF VITAL EVENTS

	Birth Rate*		Death Rate*		Fetal Death Rate**		Infant Death Rate**		Marriage Rate*		Divorce Rate*	
Month	'51-'55	'56	'51-'55	'56	'51-'55	'56	'51-'55	'56	'51-'55	'56	'51-'55	'56
January	22.2	21.8	10.1	9.7	13.8	16.4	24.7	19.0	6.2	6.0	1.5	1.2
February	22.5	23.0	9.7	9.9	13.3	13.4	22.7	18.3	7.3	7.5	1.8	1.6
March	23.9	23.3	10.5	10.3	13.1	9.8	24.9	20.5	6.3	6.0	1.9	1.7
April	22.5	20.5	10.1	9.9	13.4	14.1	24.7	22.6	7.2	8.1	2.1	2.0
May	23.8	19.8	10.0	10.0	14.0	16.0	22.1	22.8	8.0	7.8	2.0	2.0
June	24.3	22.3	9.9	10.0	13.3	13.4	24.7	22.4	14.9	17.5	2.1	1.9
July	26.4	26.4	10.2	9.6	12.7	12.7	20.7	18.1	9.0	9.2	1.9	1.8
August	26.6	26.7	9.7	9.0	14.3	11.9	19.5	19.7	10.7	11.6	1.9	2.0
September	26.0	26.5	9.1	9.2	12.8	12.5	21.1	17.4	10.4	11.6	2.2	1.8
October	26.0	25.9	9.8	9.8	13.6	16.1	22.5	17.8	9.1	8.7	2.2	1.6
November	24.1		10.0		15.6		22.1		8.5		2.0	
December	24.9		10.8		13.1		20.4		9.0		2.0	

* Rate per 1,000 population.
** Rate per 1,000 live births.

	Occurrence Data Average Year 1951-1955	Reported Events 10 Month Av.* 1951-1955	Reported Events 10 Months* 1956	Numerical Change 10 Months* 1956	Per Cent of Change 10 Months* '51-'55 & '56
Births	64,718	53,571	52,917	— 654	— 1.2
Deaths	26,471	21,713	21,830	+ 117	+ 0.5
Fetal Deaths	875	719	717	— 2	— 0.3
Infant Deaths	1,477	1,214	1,042	— 172	—14.2
Marriages	23,560	19,542	21,031	+1,489	+ 7.6
Divorces	5,250	4,305	3,924	— 381	— 8.9

* Provisional data by month reported.

MORBIDITY REPORT FOR MONTH OF NOVEMBER

Disease	1956 Nov.	1956 Oct.	1955 Nov.	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet Fever	73	45	63	Polk
Typhoid Fever	4	0	3	
Smallpox	0	0	0	
Measles	211	158	92	Buena Vista, Linn, Polk
Whooping Cough	51	55	41	Des Moines, Polk, Pottawattamie
Brucellosis	11	25	13	Crawford 3, others 1 to a county
Chickenpox	277	119	262	Dubuque, Polk, Pottawattamie, Scott
Menin. Meningitis	0	0	0	
Mumps	82	73	88	Des Moines, Polk, Pottawattamie
Poliomyelitis	19	62	26	Clinton, Pottawattamie, Wayne
Infectious Hepatitis	9	13	24	Polk, Wapello, Woodbury
Rabies in Animals	18	17	10	Cedar 2, Polk 2, others 1 to a county
Malaria	0	0	0	
Psittacosis	0	1	1	
Q Fever	0	0	0	
Tuberculosis	29	36	55	For the State
Syphilis	133	148	70	For the State
Gonorrhea	63	40	48	For the State
Histoplasmosis	1	2	0	Madison
Food Intoxication	0	0	0	
Meningitis (type undet.)	1	3	1	Clayton
Diphtheria Carrier	0	0	1	
Asceptic Meningitis	0	0	0	
Salmonellosis	4	0	0	Polk 4
Blastomyecosis	0	0	0	
Tetanus	1	0	0	Woodbury
Chancroid	0	0	0	
Coxsackie B-5	0	1	0	
Encephalitis	8	3	0	Polk 4, Winneshiek 2, Linn 1, Van Buren 1
Influenzal Meningitis	1	0	0	Wapello
Amebiasis	2	2	0	Cherokee 1, Polk 1
Clostridium Welchii	0	1	0	
Shigellosis	4	4	3	Hancock 4

POLICY ON GAMMA GLOBULIN DISTRIBUTION

All gamma globulin received by the Iowa State Department of Health comes from the American Red Cross. The Red Cross allocates it quarterly to all of the states in proportion to their populations, and the amounts are very small. Thus, Iowa no longer receives amounts sufficient to permit the Department to furnish gamma globulin to physicians for routine modification or prevention of red measles. Furthermore, it can no longer supply it for community or school prophylaxis against infectious hepatitis.

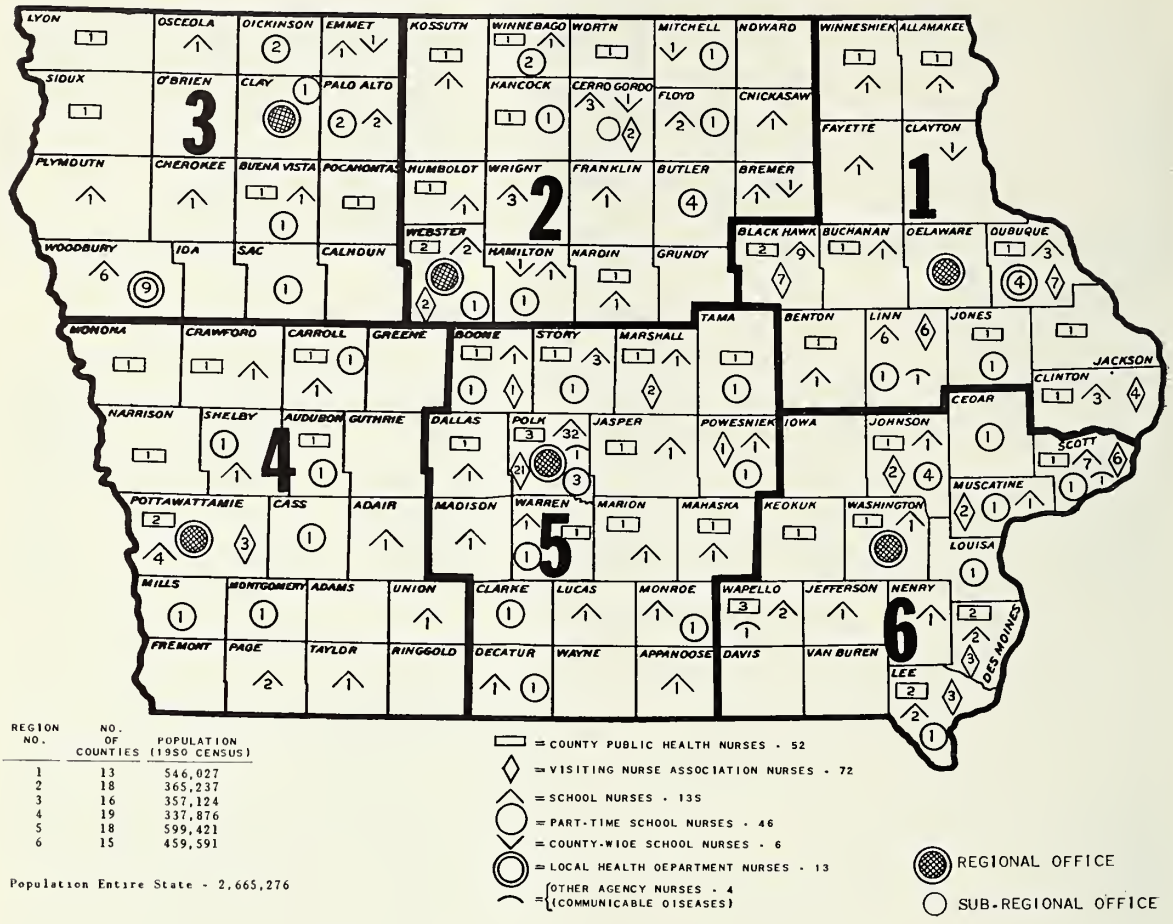
Gamma globulin can be distributed to physicians only for indigent or medical hardship persons who have been directly exposed to known cases of infectious hepatitis, red measles or German measles. It is dispensed only as follows.

1. Those who have been exposed to *measles* are eligible only if they are children under two years of age, or if they are children who suffer from some debilitating condition such as rheumatic fever or diabetes, or who have recently recovered from a severe illness.

2. Those eligible to receive prophylactic injections for *infectious hepatitis* must be very close or family contacts of a diagnosed case. There are no age restrictions, for it is well known that severity of the disease is more frequent among adults than among children.

The dosage should be 0.03 cc. per pound of body weight, with the maximum dosage 4 cc. Thus, any

PUBLIC HEALTH NURSES IN IOWA



adult over 130 pounds would receive a 4 cc. injection. With this dosage, cases will not develop unless the gamma globulin is not given before the very last days of the incubation period.

3. Those eligible for prophylactic injections of gamma globulin for *German measles* are pregnant women in their first trimester.

The majority of research reports indicate that dosages of less than 20 cc. are likely to be ineffective. In consequence, 20-30 cc. doses are recommended.

Supplies of gamma globulin are no longer large enough to permit the Department to use the depot distribution system. We do, however, attempt to keep small supplies in our regional health offices. Physicians may procure gamma globulin either from one of them or from the State Department of Health.

No gamma globulin is currently available from the State Department of Health for poliomyelitis prophylaxis.

NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

The speakers at the twentieth annual meeting of the New Orleans Graduate Medical Assembly, March 11-14, 1957 will include E. A. Rovenstein, M.D., New York, anesthesiology; N. P. Anderson, M.D., Los Angeles, dermatology; J. E. Berk, M.D., Detroit, gastroenterology; Erle Henriksen, M.D., Los Angeles, gynecology; O. O. Meyer, M.D., Madison, and I. H. Page, M.D., Cleveland, internal medicine; Barnes Woodhall, M.D., Durham, N. C., neurosurgery; J. E. Savage, M.D., Baltimore, obstetrics; C. D. Townes, M.D., Louisville, ophthalmology; Don King, M.D., San Francisco, orthopedic surgery; G. S. Fitz-Hugh, M.D., Charlottesville, Va., otolaryngology; M. B. Dockerty, M.D., Rochester, Minnesota, pathology; Sydney S. Gellis, M.D., Boston, pediatrics; Karl Zimmerman, M.D., Pittsburgh, proctology; L. L. Robbins, M.D., Boston, radiology; D. P. Slaughter, M.D., Chicago, and C. S. Welch, Albany, surgery; and W. L. Valk, Kansas City, Kans., urology.

NEW UROGRAPHIC CONTRAST MEDIUM

In recent months a triiodobenzoate product known as Hypaque Sodium, has appeared. It offers the advantages of older compounds and at the same time is virtually without objectionable reactions, according to Drs. T. E. Nesbitt, N. W. Bourne and D. P. Babbitt.*

The intravenous minimum lethal dose is in the range of 10,000 to 12,000 mg./kg. of body weight in animals, and such a dosage exceeds many times any likely clinical dose. The quality of pyelograms obtained with this compound is equivalent to, if not superior to, that reported with any other contrast medium in any concentration currently available. It would appear that it represents a substantial advance toward an ideal intravenous contrast medium.

The drug is a diacetylamine of sodium triiodobenzoate supplied as a 50 per cent solution in a 30 ml. ampule containing 8.97 gm. of iodine for intravenous use. It is excreted almost exclusively via the kidney.

There is evidence to indicate that it is excreted by glomerular filtration rather than by tubular secretion. This would permit a more rapid excretion of contrast material and may provide an explanation for the earlier roentgenographic appearance of this contrast medium following injection.

In this study Hypaque was used for a total of 537 consecutive intravenous pyelograms. The patients were unselected as to any known existing disease. There were 17 patients who had a history of known allergies or drug sensitivities; among them were 4 who had shown definite iodine sensitivity at the time of previous examination. Only 2 of these people exhibited any side effect, and in both this consisted of the mildest form of a transient flush with some nausea lasting less than one minute. No significant variations in blood pressure, pulse, or respiration were observed.

"Poor" films were obtained in only two per cent of the patients and comprised those x-rays in which the excretion was totally unsatisfactory. "Fair" films were obtained in eight per cent of the patients where there was visible drug excretion but of insufficient quality to allow a definite diagnosis. Pyelograms were rated as "good" in 39 per cent of the cases; these were films sufficiently dense for diagnostic purposes with satisfactory delineation of all shadows, of calyces, renal pelvis, and the upper ureter. A grading of "excellent" was given to 51 per cent of the pyelograms and designated a radiographic quality comparable to retrograde pyelograms, with detail definition and contrast density. About 90 per cent of the films were considered adequate for diagnosis.

The 20 per cent solution has been utilized in over 100 consecutive cases for routine retrograde study without any untoward reaction. The solution appears to be of optimum viscosity and provides an ideal contrast density. It has furnished excellent delineation of both negative and positive shadows without the obscuration of finite details often encountered with other retrograde media. This form may well prove as superior as that used intravenously.

* Hypaque sodium—a new urographic contrast medium. Wisconsin M. J., 55:815ff., (Aug.) 1956.

SUI POSTGRADUATE COURSE IN GASTROENTEROLOGY

Wednesday, January 16, 1957

Morning Session

Moderator—James A. Clifton, M.D.
Department of Internal Medicine

8:30 Registration

9:00 Some Sources of Error in Radiologic Examination of the Gastrointestinal Tract
Dr. W. H. Fischer, Department of Radiology

9:25 The Natural History of Hiatal Hernia With Emphasis on Complications
Dr. V. E. Coffin, Department of Surgery

9:50 Recent Concepts of the Treatment of Infectious Hepatitis
Dr. R. D. Eckhardt, Department of Internal Medicine, V. A. Hospital, Iowa City, Iowa

10:15 The Role of Liver Biopsy in the Diagnosis and Treatment of Liver Diseases
Dr. Thomas Corcoran, Department of Pathology, V. A. Hospital, Des Moines, Iowa

10:40 Refreshment Break and Intermission

11:00 Round Table Discussion
Problems in Bleeding from the Gastrointestinal Tract
Dr. W. B. Bean, Department of Internal Medicine
Dr. J. A. Gius, Department of Surgery
Dr. H. E. Hamilton, Department of Internal Medicine
Dr. G. H. M. Thornton, Department of Internal Medicine
Dr. R. T. Tidrick, Department of Surgery

12:30 Lunch—Doctors' Dining Room

Afternoon Session

Moderator—Robert T. Tidrick, M.D.
Department of Surgery

1:30 Some Causes of Prolonged Jaundice
Dr. J. A. Clifton, Department of Internal Medicine

1:55 Gastrointestinal Disease and Water Balance
Dr. E. E. Mason, Department of Surgery

2:00 Dysphagia
Dr. E. S. Brintnall, Department of Surgery, V. A. Hospital, Iowa City, Iowa

2:45 Reduction Diets in Obesity
Dr. Margaret A. Ohlson, Department of Internal Medicine

3:10 Polyps of the Gastrointestinal Tract
Dr. R. C. Hickey, Department of Surgery

3:35 Refreshment Break and Intermission

4:00 Clinical Pathologic Conference
A case of gastroenterologic interest will be discussed.

Woman's Auxiliary News

OUR PRESIDENT SAYS—

I sat in the audience in our Spencer High School auditorium on December 2 while the Messiah Community Choir presented Spencer's thirteenth annual Community Christmas Concert. It was then that I fully realized how like a family our small Auxiliary is, for I was no less proud of the participation of our Auxiliary members than I had been in past years of the performances of my own children on that same stage.

It was a thrilling experience to hear our own Mrs. Munger play the piano accompaniments, and I was sure I heard the individual voices of Mrs. C. C. Jones and Mrs. George Fieselman, who were members of the women's chorus. In addition, I had the pleasure of watching Mrs. Jones's talented daughter Diane play her French horn precisely and beautifully as a member of the orchestra.

These doctors' wives had found time for the long practice sessions that had been a necessary prelude to that program; their concert did a great deal toward bringing the true meaning of Christmas to the people of our area; *and they were part of my family.* I went home bursting with pride.

Are there members of *your* Auxiliary of whom you are especially proud? If so, why not write about them for our AUXILIARY NEWS?

THE NEW YEAR

We have put away the tinsel and glitter of Christmas, we have swept the rugs free of pine needles, and we have celebrated the birth of a New Year. The material things that contributed to the colorful pageantry with which we celebrated a Holy Birthday have been carefully put away for another year, but the sacraments of the Christmas season have given us renewed vigor, and the Spirit of Christmas will be with us throughout the coming twelve months.

No one accomplishes all of the things she hopes to do, and as Auxiliary members all of us have in one way or another fallen short of the goals we set ourselves for 1956. Yet, each of us has done her best, and as your president, I deeply appreciate the work that you have done and the loyalty that you have shown. Let us face the New Year with no regrets, but with the wisdom of our past experience. It is time to look ahead!

Invoice your community needs. Your accomplishments are your stock on hand. Soon your state chairmen will send you duplicate report forms. Study them well. If, in the list, you find some activities which you failed to undertake but which would benefit your community, begin them now!

Did you send a TODAY'S HEALTH subscription to a friend and to a new member?

Have you been active in community mental health projects?

Have you made yourself an informed Auxiliary member?

Did you remember to give to AMEF?

Have you worked with your local civil defense organizations?

Have you an emergency cupboard in your own home?

Do you practice safety measures in your own home and on the highway?

Do you insist on having and using safety devices in your family cars?

Have you remembered your Future Nurses Clubs and our need for loan funds?

Have you made a new friend and gained an Auxiliary member?

Are you sending personal and organization news items for publication in the WOMAN'S AUXILIARY NEWS?

This year, plan to discard your "File 13" and replace it with a "File 14." Get into the habit of keeping materials where you can find them when you need them.

Have you answered your mail?

It may be later than you think, but it is never too late to begin a new project. Let us make this year of Auxiliary work a year with no regrets! Incorporate "The Way of Life" into your 1957 Auxiliary activities.

I shall pass this way but once; any good thing therefore that I can do, or any kindness that I can show, let me do it now. Let me not defer it or neglect it, for I shall not pass this way again.

JANE KING
President.

"MILESTONES TO MARRIAGE"

"Milestones to Marriage" is a series of letters to high school students that has been published by the Louisiana Society for Mental Health, and the Auxiliary is sponsoring a pilot study in the use of them as subject matter in 18 schools of various sizes in Iowa.

The Auxiliary members who volunteered to work with school officials in starting this project report that the letters have been unusually well received, and there is no doubt that many more superintendents, faculty advisors and social studies teachers would welcome an opportunity to cooperate. Heretofore, time hasn't permitted the inclusion of this topic in the course of study.

The introductory paragraph in Letter No. 1 explains the point of view of the series: "American youth are becoming more and more interested in success in love and marriage. The day is going fast when young people are guided by complexes and blind emotion. In these times they want their eyes open. They want to know what is ahead. They want all the happiness there is to be found in marriage. Youth do not want to settle for a thimbleful of companionship and good living when a barrelful might as well be had."

County mental health chairmen should consider introducing this project in their communities, and in counties where there are no mental health chairmen, individual Auxiliary members are encouraged to volunteer their services in getting this work started.

Follow-up is of course important, wherever this project has been introduced. The sponsoring Auxiliary should ascertain the use that is being made of the series of letters, and find out what the student response has been. Everyone is sure to enjoy work of this kind, for everyone likes to help young people.

Each community looks to its physicians' wives for help in carrying out a sound health program, and mental health education is an essential part of every such scheme. Other organizations in the community can profitably be enlisted as co-sponsors in the schools' use of "Milestones to Marriage."

Auxiliary members who are interested in promoting this project should write either to Mrs. L. A. Coffin, Farmington, State Mental Health Chairman, or to Mrs. Hazel Lammey, Woman's Auxiliary Administrative Secretary, 529 36th Street, Des Moines 12.

POCAHONTAS CAREER DAY

Mrs. Dean H. King was a member of the group of counselors who participated in the tenth annual Career Day at the Pocahontas High School on November 19. She was present for the general assembly in the morning, and spoke on nursing at two sessions in the afternoon.

At noon, the counselors were luncheon guests of the Pocahontas Rotary Club at the Farm Bureau Building.

PRACTICAL NURSE TRAINING

Mrs. Charles H. Flynn, Clarinda, and Mrs. Bruce F. Howar, Webster City, have recently been appointed as the Auxiliary's representatives on a state committee to help develop a training program for practical nurses. The Division of Vocational Rehabilitation of the State Department of Public Instruction is promoting this project, and will present a tentative plan as soon as all interested and concerned groups have nominated members for this committee.

Funds for training programs through which women may prepare for licensure as practical nurses have been made available as a result of the passage of "Title II" of Public Law 911, by the second session of the 84th Congress.

Drs. E. P. Lovejoy, Des Moines, and L. O. Goodman, Marshalltown, members of the Nursing Education and Service Committee of the Iowa State Medical Society, have also been appointed to this committee.

IOWA NURSING CAREERS COMMITTEE

The Iowa Nursing Career Committee, of which Mrs. Charles Flynn, Clarinda, and Mrs. N. W. Irving, Des Moines, are members representing the Auxiliary, has several projects through which information is being provided to girls interested in entering nurses' training and to persons inquiring about nursing education facilities in Iowa.

The Committee is currently preparing a new brochure entitled "Nursing Schools in Iowa," and is compiling an up-to-date list of scholarships and loan funds available to nursing students. Both will soon be ready for distribution.

Any Auxiliary member who has pertinent information that will be of use to the Iowa Nursing Careers Committee is invited to send it to Mrs. Flynn, its chairman. Mrs. Irving is chairman of a subcommittee which is working on an Iowa manual for sponsors of Future Nurses Clubs. She will welcome any suggestions that occur to Auxiliary members who have had experience in that line of work.

SAFETY FIRST

Don't be caught dead sitting on your safety belt!

Help your central office to maintain an accurate mailing list. Send your change of address promptly to the Journal, 529-36th Street, Des Moines 12, Iowa.

COUNTY AUXILIARIES

Boone

The Auxiliary to the Boone County Medical Society met for luncheon on Tuesday, November 13, at the Lincoln Restaurant. Eleven members were present. The program, with Mrs. W. H. Longworth in charge, was devoted to the compilation of a mailing list of those women who it was thought should receive the ISMS booklet entitled "Hi There," on the physician-hospital controversy. Mrs. E. E. Linder, the president of the Auxiliary, had ordered a supply of them, and members selected names of people to whom they wished to send copies, along with personal notes.

Clay

Thirty-three members of the Spencer High School Future Nurses Club accompanied Mrs. Frank Edington on a tour of the Mental Health Institute at Cherokee, on December 4.

During the preceding week, at Mrs. Edington's home, the girls had apportioned a supply of Christmas cards among themselves and agreed to sell them for the benefit of the National Epilepsy Foundation. Also, Miss Betty Barton, school nurse, and Mrs. Edington introduced a baby-sitting program to them.

Mahaska

Members of the Mahaska County Medical Auxiliary assisted the Mahaska County Medical Society in preparations for the centennial banquet that was held on November 2 at the Downing Hotel in Oskaloosa.

Eighteen Mahaska County doctors and their wives were present at that event. Dr. Kenneth Lemon, president of the Mahaska County Medical Society, introduced Dr. Fred Sternagel, president-elect of the ISMS, who conveyed congratulations to the group.

Dr. Walter L. Bierring, the former Iowa commissioner of health and now director of the Division of Heart and Chronic Diseases in the State Health Department, recalled doctors whom he had known from the early days in Mahaska County.

Dr. Lemon and Dr. Robert Alberti, chairman of the centennial celebration, thanked the members of the Auxiliary for their part in planning the banquet.

Wapello

The Wapello County Medical Auxiliary held its annual dinner on November 11 at the Country Club, in Ottumwa. The committee which planned the banquet consisted of Mmes. G. C. Blome, W. W. Ireland, Robert Hughes and W. N. Whitehouse.

VISITING DAYS AT IOWA INSTITUTIONS

In November and December, the State Board of Regents invited representatives of various groups to tour the institutions of which it has charge. Its purpose, of course, was to acquaint key individuals with the needs of each one of the state schools and hospitals for which it is asking increased appropriations.

Representing the Woman's Auxiliary to the Iowa State Medical Society, Mrs. J. F. Gerken, Waterloo, visited the Iowa Braille and Sight-Saving School at Vinton; Mrs. C. H. Stark, Cedar Rapids, and Mrs. C. P. Phillips, Muscatine, visited the State Sanatorium at Oakdale; Mrs. H. W. Mathiasen and Mrs. Isaac Sternhill, both of Council Bluffs, visited the Iowa School for the Deaf, at Council Bluffs; Mrs. Gerken and Mrs. R. R. Goad, Muscatine, visited the State University of Iowa; and Mrs. R. F. Nielsen and Mrs. George Bairnson, both of Cedar Falls, visited the Iowa State Teachers College, in Cedar Falls. Mrs. Wm. B. Chase, Jr., and Mrs. H. C. Merillat, both of Des Moines, will visit Iowa State College in January.

A report of the Legislative Committee of the State Auxiliary, which will be published in a later issue of the WOMAN'S AUXILIARY NEWS, will contain a digest of these representatives' impressions.

THE CHATTER BOX

Hello again! We hope you enjoyed our December column and that you will be bursting with news items to send us concerning your family and friends.

Many of you will be trekking to California for the Rose Bowl game! What fun you will have!! Tell us about it so that we can describe the excitement and color for all of our readers.

We wish you all a most Happy and Peaceful New Year!

'Bye until next month.

WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

President—Mrs. Dean H. King, 301 E. 4th Street, Spencer
President-Elect—Mrs. J. F. Gerken, Waterloo
Secretary—Mrs. Robert P. Mason, 5818 Chamberlain Drive, Des Moines 12
Treasurer—Mrs. E. A. Vorisek, 6205 Woodland Rd., Des Moines 12
Editor of THE NEWS—Mrs. E. T. Burke, 601 S.W. 42nd Street, Des Moines 12
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The Relationship of Organized Medicine To Blue Shield

RICHARD F. BIRGE, M.D.

DES MOINES

In considering the relationship of organized medicine to Blue Shield, it might be well for us first to recall what Blue Shield is.

Blue Shield is a program which your state medical society set up basically for the purpose of helping people budget their expenses for medical services by means of prepayment. Blue Shield collects fees in advance for the services which you render to your patients. By agreeing to the principle of full-service coverage, you underwrite the program with a guaranty of a fair reduction of your fees to subscribers who have low incomes.

Hence, Blue Shield has a relationship to the medical profession which is not infrequently forgotten. A concept seems to have developed that the only obligation of Blue Shield is to its subscribers. But isn't it the physician who offers the full-coverage benefits? On the other hand, isn't the important obligation of Blue Shield to subscribers a fiduciary one?

If these questions are pertinent, we must conclude that a joint, mutual responsibility should bind Blue Shield and physicians closely together.

MEDICINE HAS LOST TOUCH WITH BLUE SHIELD

Unfortunately, Blue Shield and organized medicine, in many states, have developed conflicting philosophies as to the nature, functions and objectives of the plan. Concomitantly, there has been a tendency for Blue Shield to remain aloof to changing conditions of medical practice, and to become insensitive to the needs of practitioners, particularly those in non-surgical fields.

Gradually, a serious situation has developed. Blue Shield and organized medicine have drifted apart. As I shall bring out later, this is the fault of the medical profession, not of Blue Shield. I am not here to indict Blue Shield.

Lack of vigilance by organized medicine has resulted in two serious operational defects: (1) a breaking down of channels of communication between medical societies and Blue Shield plans; and (2) a corollary lack of understanding of one another's objectives and good intentions.

In Iowa during recent years, the State Medical Society and Blue Shield seemed to be out of touch with one another. Neither group was well-informed as to what the other was doing, or completely convinced of the soundness of the other's objectives. Moreover, many people felt that Blue Shield was not meeting the needs of physicians in non-surgical fields. It was beginning to lose business, and its program was too inflexible or too limited to permit participation in certain new opportunities. In the meanwhile, commercial companies were growing and developing.

IOWA'S REMEDY

When a considerable number of physicians had come to realize that Blue Shield had a genuine need for the support, encouragement and cooperation of organized medicine, the Iowa State Medical Society authorized the appointment of a special committee to study the matter and report (1) recommendations for enhancing the Blue Shield program; (2) means by which the ISMS might support that enhanced program; and (3) improvements that might be made in the relationship between our Society and Blue Shield. As a result of those studies, an expanded Blue Shield program was recommended by our House of Delegates.

Next, a young Des Moines surgeon having a genuine interest in Blue Shield as well as a considerable administrative ability was appointed to the Blue Shield Board upon the recommendation of the Board of Trustees of the ISMS. By example and by diligent and constructive effort, this man stimulated renewed interest in the expansion of the Blue Shield program. The officers and members of the Blue Shield Board soon recognized his capacity and chose him as chairman of the Executive Committee. In turn, he reactivated the Executive Committee, and Blue Shield began to function with renewed vigor.

As an example of this man's clear thinking, I might mention that he recognized promptly that the Iowa State Medical Society, not Blue Shield, should assume the responsibility for formulating fee schedules. Hence, that responsibility is being transferred, in accordance with his suggestion.

In the meanwhile, it had become clearly apparent that an effort to reestablish an adequate two-way channel of communication between the ISMS and Blue Shield was absolutely essential. Overtures of a special delegation of Medical Society officers were well received by the Blue Shield Board, and in a surpisingly short period of time a mutually satisfactory working relationship has been instituted.

First, a temporary Liaison Committee was set up between the ISMS and the Blue Shield Board.

Dr. Birge, the secretary of the Iowa State Medical Society, gave this address at the November 11, 1956, meeting of the North Central Medical Conference, in St. Paul, Minnesota.

Now, through the recommendations of this Committee, a permanent Liaison Committee is being set up. The permanent group, composed of three members of the Blue Shield Board and three members of the ISMS Board of Trustees, is to be an active committee obligated to thrash out many problems of mutual interest, and it is also to be the Nominating Committee of Iowa Blue Shield. As a Nominating Committee, including as it does some of the elected officers of the Society, it offers assurance to participating physicians that, as new blood is needed for the Blue Shield Board, all of the facilities of our Society will be used to obtain top-flight candidates to represent councilor districts, and also to obtain specially qualified physician and non-physician candidates to serve as directors-at-large.

Next, it was agreed that three members of the official family of the ISMS shall serve ex-officio on the Blue Shield Board as full members. One of these three Board members also serves on the Blue Shield Executive Committee.

In turn, two members of the Blue Shield Board serve ex-officio in the House of Delegates and on the Executive Council of the ISMS. These are the policy-making bodies of our Society.

Finally, the executive director of Blue Shield and the executive secretary of the ISMS attend all policy meetings of both organizations.

Hence, Blue Shield will play an active role at the policy-making level in the Iowa State Medical Society, and in this way will become an integral part of the Society. Its representatives have opportunities to promulgate the objectives of Blue Shield, and are accessible to Medical Society delegates and officers for explanations of Blue Shield policies.

In turn, as three of us sit on the Blue Shield Board as representatives of the Medical Society, we are in a position to improve our understanding of the problems of Blue Shield. We become more concerned than ever before about the best interests of Blue Shield subscribers. Most importantly, we are in a position to inform the Blue Shield Board concerning Medical Society policies, in order that our efforts can be coordinated.

Through this arrangement, we have a plan which we hope will enable Blue Shield of Iowa and the Iowa State Medical Society to function in an integrated manner, without in any way lessening the stature or curbing the corporate independence of the Blue Shield Board. Our Blue Shield Board of Directors is composed of competent, highly respected laymen and outstanding physicians who are leaders in Iowa medicine. We have found these men to be completely cooperative, now that we have made an opportunity to sit with them, dispel suspicions as to motives, and adequately present to them our ideas, our wishes and our hopes for all that is best for Iowa Blue Shield.

THE NEED FOR COOPERATION

Such a close working relationship between Blue Shield and your state medical society is absolutely essential!

It is essential partly because physicians really need Blue Shield. We must always keep in mind that Blue Shield is the best means we have for offering medical services to low-income groups at fees which they can afford. That this arrangement constitutes a wonderful public relations program and an excellent buffer against governmental control of medicine is a concept which we all recognize, yet sometimes forget.

Granted that physicians need Blue Shield, let it not be forgotten that Blue Shield could hardly exist without the cooperation of the medical profession.

The unfortunate tendency for Blue Shield plans and their parent medical societies to go down separate roads is not peculiar to Iowa. It is a general trend which has not been and is not now the wish of physicians.

As is true in so many instances where physicians lose rights that they treasure, this situation can be attributed to no one but ourselves. We created Blue Shield plans as corporate entities! If you will look over some of the Blue Shield articles of incorporation, you will be astonished to find that Blue Shield plans have been set up almost invariably as self-perpetuating bodies, with the full privilege of making amendments in their articles of incorporation or by-laws without the approval of participating physician members or of the medical societies with which they are affiliated.

Nevertheless, as I have stressed, this autonomy of Blue Shield has not been the intent, and it is not now the wish of physicians. Moreover, if the trend continues, the result will be disastrous for physicians and for Blue Shield. The trend is becoming more and more serious, for most Blue Shield plans are offering broader benefits up to at least the $6,000 family income level. This means that physicians will be working ever more and more for Blue Shield as well as for other insurance companies.

SAFEGUARDS MUST BE ESTABLISHED

If physicians are to be ever more dependent upon Blue Shield under the continued application of the full-service principle, safeguards must be established.

What are some of those safeguards? The first is that physicians, through their medical societies, must assume responsibility for developing fee schedules for the use of Blue Shield. They should, of course, assume this responsibility with humility, and the fees must be fair. The assumption of this obligation will not only relieve Blue Shield of unnecessary criticism, but will also preserve the physicians' prerogative of setting their own fees.

Moreover, the arrangement constitutes a fundamental safeguard for the patient's welfare.

Next, we must seek guarantees that Blue Shield will never be able to alter its basic program and begin to provide medical services directly to subscribers. I am certain that there is no such intent on the part of our Iowa Blue Shield Board. Yet, surprisingly, the Articles of Incorporation of Iowa Blue Shield provide: "The corporation shall have the right to enter into contract with physicians and surgeons for the rendering of medical and surgical services to such subscribers." The phraseology would seem to authorize the corporate practice of medicine by an insurance company. In years to come, if organized medicine can't "hit it off" with Blue Shield and if participating physicians become recalcitrant, might not a Blue Shield Board of the future decide to hire its own physicians to provide medical services?

By far the most important safeguard of all is a system of checks and balances under which Blue Shield functions cooperatively with your state medical society. The physician members of your society must have and must be able to use machinery that lets them be heard when they have constructive recommendations for Blue Shield. This machinery consists of the doctors' own county and state medical societies. Unless his medical society is in a position to speak effectively for him, a physician has no adequate means of effective communication with Blue Shield.

It is even more essential for Blue Shield, in turn, to have adequate machinery by which to gain and maintain the physician support that is necessary for the welfare of its program. Someone must continually sell Blue Shield to the profession, and keep it sold. Blue Shield must always command the confidence and trust of its participating physicians. The necessary machinery for this purpose is, again, your state medical society.

CONCLUSION

In closing, I would submit to you the thought that there is no Blue Shield as such in your state. There is only Blue Shield, the insurance program of your state medical society.

Blue Shield is the doctors' program.

If a group calling itself Blue Shield stands aloof from organized medicine, that group and that program will surely fail, and its failure will work to the detriment of both doctors and patients.

Medicare

Medical, surgical and obstetric care by civilian doctors is available to dependents (wives and unmarried children under 21) of active-duty military personnel. Benefits began December 7, 1956.

The Iowa State Medical Society is handling the administration of the program. Doctors should send their claims direct to Medicare, 529-36th Street, Des Moines 12, Iowa.

The following are pertinent points for physicians to remember:

1. Government claim forms DA1863 must be completed **in duplicate** and mailed to the above address.

2. Items 9 through 13 need not be completed by consultants, radiologists, anesthesiologists and pathologists, but **item 14 (the patient's signature) must be completed on all forms.** The patient thus gives the physician authority to release information to Medicare, and also certifies to the fact that he or she is a qualified dependent.

3. No Medicare fee schedule will be published. **The physician should submit charges on the basis of his "customary, usual and reasonable" charges for similar services rendered to other patients in his community.** The Schedule of Allowances negotiated by the ISMS contains maximums that are expected to be sufficient to permit physicians their usual charges for services.

4. **Except for treatment of bodily injuries or home delivery, care provided in the home will not be recompensed.** The patient is required to pay the first $15 of charges for this type of care. Prenatal care rendered prior to December 7, 1956, is the responsibility of the patient.

5. Instructions were mailed to each Iowa doctor with an ISMS NEWS BULLETIN dated December 5, 1956. Claim forms were forwarded to the secretary of each county medical society.

Additional claim forms may be obtained from Medicare, 529-36th Street, Des Moines 12. **Mutual of Omaha handles the administration only of hospital claims.**

6. Briefly-stated and helpful information is to be found on the reverse side of the claim form.

Mayo Clinical Reviews

Following is the program of a course of lectures and discussions entitled Clinical Reviews, which is to be presented at the Mayo Clinic and Foundation, in Rochester, Minnesota, April 1-3, 1957.

The number of physicians who can be accommodated is necessarily limited, and it is advisable that applications be submitted early. They should be addressed to Mr. R. C. Roesler, at the Mayo Clinic. There are no fees.

The AAGP has announced that a total of 21 hours' credit will be granted to those of its members who attend.

Monday Morning, April 1

"Low Back Pain"—Dr. E. W. Johnson, Jr.
"The Painful Shoulder"—Dr. H. H. Young
"New Steroids in Rheumatic Diseases"—Dr. H. F. Polley
"New Agents in the Control of Diabetes"—Dr. L. O. Underhill
"Management of Surgical Emergencies"—Dr. G. A. Hallenbeck
"Diagnosis and Treatment of Shock"—Dr. P. E. Bernatz
"Management of Burns"—Dr. M. B. Coventry

Monday Afternoon, April 1

"Pitfalls in Interpretation of Electrocardiograms"—Dr. R. D. Pruitt
"Valvular Heart Disease"—Dr. R. L. Parker
"The Differential Diagnosis of Chest Pain"—Dr. H. B. Burchell
"The Treatment of Coronary Sclerosis With and Without Infarction"—Dr. G. W. Daugherty
"The Treatment of Congestive Heart Failure"—Dr. M. W. Anderson
"Congenital Heart Diseases Amenable to Surgical Treatment"—Dr. R. O. Brandenburg
"Surgical Care of Congenital and Acquired Heart Disease"—Dr. J. W. Kirklin
"Atherosclerosis: Therapeutic Concepts and Surgical Procedures"—Dr. J. E. Estes, Jr.
"Newer Concepts in the Treatment of Hypertension"—Dr. R. W. Gifford, Jr.

Monday Evening, April 1

Review of Recent AMA Exhibits
Medical and Surgical Motion Pictures

Tuesday Morning, April 2

"Constipation and Its Treatment"—Dr. J. A. Bargen
"Management of Peptic Ulcer"—Dr. J. C. Cain
"Current Use of Vascular Grafts in Surgery of the Extremities"—Dr. J. C. Ivins
"The Management of Varicose Veins"—Dr. T. T. Myers
"Advancement in Anesthesiology"—Dr. Albert Faulconer, Jr.
"Treatment of the Seriously Ill Asthmatic Patient"—Dr. G. A. Koelsche
"Current Applications of Anticoagulant Treatment"—Dr. J. F. Fairbairn, II
"Dermatitis of the Hands"—Dr. L. A. Brunsting

Tuesday Afternoon, April 2

"Diagnostic Leads From the Encephalogram"—Dr. R. G. Bickford
"The Diagnosis of Convulsive Disorders"—Dr. D. W. Mulder
"Treatment of Convulsion"—Dr. David Daly
"Differential Points in the Headache Problem"—Dr. E. D. Rooke
"The Treatment of Headache"—Dr. J. G. Rushton
"Thoracic Outlet Syndrome"—Dr. K. B. Corbin
"Treatment of 'Strokes'"—Dr. R. G. Siekert
"Managing the Acutely Disturbed Patient"—Dr. H. P. Rome
"Progress With Tranquilizing Drugs"—Dr. R. L. Faucett

Tuesday Evening, April 2

Physicians attending "Clinical Reviews" and their wives are cordially invited to be the guests of the Mayo Clinic staff at a dinner and program beginning at 6:30, at the Kahler Hotel. Mr. Louis B. Nichols, associate director of the FBI, will be the speaker.

Wednesday Morning, April 3

"Chest X-ray Patterns"—Dr. Andre Bruwer
"Polyps of the Lower Part of the Bowel: Management"—Dr. R. J. Jackman
"Diagnosis and Treatment of Vertigo"—Dr. H. L. Williams
"Newer Antibiotics: Indications and Methods"—Dr. D. R. Nichols
"Anemia—Diagnosis and Management"—Dr. E. D. Bayrd
"Treatment of Chronic Nephritis"—Dr. J. C. Broadbent
"Feeding Problems and Newborn Nutrition"—Dr. L. E. Harris
"Indications for Cesarean Section"—Dr. J. E. Faber

Wednesday Afternoon, April 3

"Malignant Lesions and Exfoliative Cytology: Introduction"—Dr. J. R. McDonald

CARCINOMA OF THE LUNG

"Exfoliative Cytology: Technic and Results"—Dr. L. B. Woolner
"Roentgenologic Diagnosis"—Dr. C. B. Holman
"Clinical Manifestations and Bronchoscopic Diagnosis"—Dr. H. J. Moersch
"Surgical Treatment"—Dr. O. T. Clagett

CARCINOMA OF THE CERVIX

"Exfoliative Cytology: Technic and Results"—Dr. D. C. Dahlin
"Cervical Biopsies"—Dr. M. B. Dockerty
"Clinical Aspects: Staging"—Dr. E. A. Banner
"Radiologic Treatment"—Dr. Martin VanHerik
"Surgical Treatment"—Dr. V. S. Counseller

Scientific Articles

"Happiness Pills" in Medical Practice: A Symposium

BY MEMBERS OF THE STAFF AT BROADLAWNS-POLK COUNTY HOSPITAL

DES MOINES

Dr. Wallace Rindskopf: During the past 10 years, physicians have faced an assault in force from the manufacturers of a multiplicity of therapeutic agents having identical properties or similar purposes. All too often, their first exposure to these therapeutic agents has been via literature presented by the drug houses or by their representatives. The brochures and the detail men say that these drugs have certain properties and therapeutic values, and though their statements are not based upon exhaustive clinical tests, we can be certain that their claims reflect their beliefs. Ultimately, however, it is the general public that must be the guinea pig, and it is the individual practitioner who must decide the true value of any pharmacologic product.

It is our purpose to present a brief review of the tranquilizing drugs in the light of our day-to-day experience. Dr. Mark Ravreby, the first speaker, will discuss their pharmacology; Dr. Charles Gutenkauf will then talk about their clinical usefulness from the point of view of the internist; and Dr. Sidney Sands will conclude our presentation, speaking of the psychiatrist's attitude toward them.

PHARMACOLOGY

Dr. Mark Ravreby: Since it would be impossible for us to cover the entire field, we have chosen to discuss the rauwolfia group, the promazine group and meprobamate. As for my part in this presentation, let me remind—and, perhaps, frighten—you that I could launch into an exposition of the chemical properties of the drugs, spicing my discussion with a long list of exotic chemical names and frequent references to foreign literature. I am sorely tempted to adopt that course of action, for I see little reason for your being permitted to escape a punishment equal to that which I endured in preparing for this session. But I shall forego that usual approach, and instead shall dwell only upon what seems interesting and instructive in the pharmacology of these drugs.

Rauwolfia got its name from an old German doctor, Leonard Rauwolf, who stole the thunder from earlier Greek and Arab pioneers in the field by getting the drug named after himself. Many species have been described. Of the numerous alkaloids, reserpine alone is possessed of all the desired properties, and therefore is best known.

The majority of the properties of reserpine depend upon its depressant effect upon the hypothalamus, and especially upon the sympathetic and emotional centers located there. The term *tranquilization,* rather than *sedation,* is employed in describing the effects of reserpine. Although Webster defines *sedation* as the act of making calm or allaying the nervous state, most physicians, when they think of sedation, automatically think of cortical depressants such as the barbiturates and the bromides. Actually, reserpine is more truly a sedative.

Animals under reserpine sedation are generally quiet and calm, and have an unusually relaxed attitude toward their immediate environment. Wild monkeys demonstrate the difference between the actions of the barbiturates and of reserpine. When jungle-born and captured, these animals will flee when given the opportunity, or if restrained, they will fight and scratch. One cannot handle them without wearing heavy gloves. To obtain a degree of quieting sufficient to permit one's handling them, they must be given barbiturates in doses almost sufficient to render them unconscious. Their reflexes are lost, and they are in a plane of

This symposium was the scientific program at the December 19 meeting of the Polk County Medical Society, held at the Broadlawns-Polk County Hospital.

light anesthesia. Under reserpine, contrastingly, they are rendered calm and quiet, and they can be handled without gloves. Yet they can perform normally. Barbiturates have been noted for their action in blocking cortical stimulants such as metrazol, picrotoxin or electro-shock. Reserpine, on the other hand, will not block the convulsant effects of these drugs, but will actually lower the threshold for electro-convulsive stimulation.

The antihypertensive effect of reserpine seems to be due to depression of the sympathetic governing center of the hypothalamus. Stimulation of this center causes peripheral vessels to constrict and the heart to speed up. Reserpine depression of this center blocks these effects. There is no peripheral action such as sympathetic blockade, nor is there any direct action upon blood vessels. With a decrease in sympathetic activity due to reserpine, there may be a preponderance of parasympathetic tone, and that may account for the so-called side effects. For example, the relaxation of blood vessels causes nasal stuffiness. There are an increased intestinal activity and an increased gastric volume and free acid, and there is a bradycardia—all of which are well-known parasympathetic activities. Actually, newer work has shown that the action is not directly upon the hypothalamic center. Rather, reserpine augments the cortical inhibitory stimuli to the center. Removal of cortical inhibition promotes sham rage, but the facilitation of cortical inhibition, which is the action of reserpine, has a tranquilizing effect.

Recently, it has been discovered that reserpine reduces the serotonin content of the brain and other tissues throughout the body, and presumably by ridding the body of this powerful vasoconstrictor agent, it relaxes smooth muscles throughout the body. The other drugs in this group have no such action.

Chlorpromazine was first subjected to clinical investigation in France, where it is called Largactil. Incidentally, it is known by that name today in Canada. Chlorpromazine is a phenothiazine, and is chemically related to promethazine or phenergan. You perhaps will recall that your drug detail man told you confidentially that this antihistamine is also a good sedative and is useful as a pre-anesthetic agent.

Chlorpromazine, or Thorazine as it is known in this country, has been widely employed for its anti-emetic action. Its other well-known properties include a variable efficiency in reducing blood pressure, secondary to its mild adrenergic blocking activity. Thus, the effects of small doses of epinephrine can be reversed by Thorazine. One precaution must be noted. If a hypotensive response ensues from the use of a promazine such as Thorazine or Sparine, it appears desirable to use a vasopressor drug such as norepinephrine to counteract it. Epinephrine should not be used, for promazine may reverse its action, causing a further lowering of blood pressure, instead of permitting its usual elevating effect.

A tachycardia compensatory to the mild hypotension is often noted. Many patients will exhibit a hyperthermia, with ranges from 99° to 101°F. for a few days, and afterwards, possibly, a hypothermia. Patients receiving large doses of chlorpromazine exhibit definite motor retardation and an unsteady gait, and their facial expressions become rather wooden. Their general appearance resembles that of Parkinsonism, but there is no muscular rigidity. There is usually a marked drowsiness, and it may increase to the point of somnolence. The sedative action of chlorpromazine is most effective against an acutely agitated and restless nervous system, for the sedative effect is not associated with a clouding of consciousness, impairment of judgment or disinhibition of affect.

The mode of action of chlorpromazine has not been fully established. It had been surmised that the drug acted through an effect upon general metabolism, by lowering the cellular oxygen requirement. However, the drug appears to affect selectively those sub-cortical structures that are concerned with the maintenance of psychomotor drive and wakefulness. A more localizing explanation of chlorpromazine and promazine is that they inhibit the alerting mechanism in the reticular formation of the brain. The great value of promazine lies in its power to quiet severely excited patients without rendering them confused or otherwise inaccessible.

The toxicity of chlorpromazine is noteworthy. Such undesirable side effects as hepatic dysfunction, and extrapyramidal symptoms resembling the Parkinson syndrome have been reported not too infrequently. An agranulocytosis has also been described. Hypotension and tachycardia often limit usefulness of the drug.

Promazine. The removal of the chlorine radical from the parent phenothiazine changes chlorpromazine to promazine, the trade name of which is Sparine, and substantially reduces the undesirable side effects.

Mephenesin. The parent substance of meprobamate is mephenesin, which was introduced in 1946 as a muscle relaxant and is sold under various trade names, one of which is Tolserol. The great disadvantage of mephenesin is its short duration of action due to its rapid oxidation in the body.

Meprobamate. A desire for a longer-acting drug led to the discovery of meprobamate, known as Miltown and Equanil. Meprobamate has a very simple chemical structure, and is one of the few simple aliphatic compounds used in medicine. It exhibits three properties of medical interest: (1) a muscle-relaxing action; (2) an anticonvulsant action; and (3) a taming action, best seen again in wild monkeys.

The muscle-relaxing action is similar to that of

mephenesin, but of greater potency and longer duration. Voluntary skeletal muscles are affected selectively. The drug has been found to be more effective against the spasm and tremor of a muscle than against muscular tension.

It exhibits its strong anticonvulsant action in animals, and will protect them against death from strychnine. It will also modify electro-shock seizures in animals. A suitable dose will allay fear and hostility in them, but appetite and alertness will remain unimpaired.

Meprobamate exhibits a blocking action upon interneurones. For example, it has no effect upon knee jerk, which is a simple reflex arc without interneurones, but it decreases or abolishes the flexor reflex and the crossed extensor reflex, which have one or more interneurones between the afferent and efferent arcs. Meprobamate alters the recorded electrical activity of the thalamus in animals. This action is not seen with the other ataraxic drugs reserpine and promazine. Today, we can only speculate upon this action.

The toxicity of meprobamate is of a low order, and 90 per cent of the drug is eliminated, in the urine after hepatic conjugation. There have been reports of an itchy, erythematous or urticarial rash, which may be generalized or may be confined to the groin.

As the list of ataraxic drugs continues to grow, and as our morning mail continues to bulge with samples and glowing reports, it would behoove us to give careful study to the indications and contraindications for their use. Though that task will require you to spend many serious hours in perusing the literature, the other two panelists tonight are prepared, I understand, to present summaries of those phases of the subject.

INTERNAL MEDICINE

Dr. Charles Gutenkauf: Like Dr. Ravreby, I shall talk first about the rauwolfia derivatives.

Rauwolfia, to physicians other than psychiatrists, is chiefly useful in the treatment of hypertension. Various fractions have been thought to possess more hypotensive and less sedative effects than does reserpine, but a perusal of the literature reveals no agreement that any of the fractions is really preferable. Reserpine possesses all of the actions of the crude drug and of the other fractions, and roughly—milligram for milligram—it is 1,000 times as potent as the crude drug. In other words, 0.1 mg. of reserpine is the equivalent of 100 mg. of rauwolfia.[1]

As Dr. Ravreby mentioned, it produces some inhibition of the sympathetic nervous system, which results in some parasympathetic overactivity. Its action is gradual and cumulative, so that with a constant daily oral dose bradycardia is usually not apparent until about the eighth day, and a definite hypotensive effect occurs about the tenth day.[2] It is cumulative for at least two weeks, and when discontinued, the effect persists up to 20 days. It relaxes mild, nervous hypertensives and is perhaps more useful in that group. Patients who are less tense frequently feel unpleasantly retarded and lethargic. The antihypertensive effect is mild, being more marked in hypertensives than in individuals with normal blood pressure.

The blood pressure ordinarily is not reduced by more than 30 mm. systolic and 20 mm. diastolic, and the average reductions are no more than half of those amounts. A few patients will experience a systolic depression of as much as 50 mm. Hg. on average doses.[2] Increasing the dosage of quarter-milligram reserpine tablets, of two-milligram alseroxylon tablets or of 100 mg. crude root tablets beyond two or three daily does not increase the antihypertensive effect appreciably, and greatly increases the incidence of undesirable side reactions.[1]

Drowsiness, mental sluggishness and nasal congestion are the most frequent ill effects, but they are seldom serious. Antihistamines are useful in combatting the nasal stuffiness. Increased peristaltic activity may cause mild diarrhea, but in some individuals that is welcome. It is of some help, for example, in overcoming the constipation which results from the use of ganglionic blockers. It frequently aggravates peptic ulcer, and it should be given cautiously, if at all, to an individual who has a history of peptic ulcer.

Another side effect of rauwolfia is emotional depression. One to two per cent of patients become depressed as a result of taking the drug for extended periods of time. In some series, the incidence has been reported as from four to five per cent. This usually occurs in an individual who has been on large doses for weeks or months and who has a history of depression. A previous depression is considered an absolute contraindication to the use of rauwolfia, since a large number of those who develop depression will respond to nothing short of shock therapy, unless the drug is discontinued very early. All patients to whom rauwolfia is being administered should be cautioned about the possibility of this side effect and should be observed frequently during therapy.

Because of its bradycardic effect, reserpine is usually most helpful in removing the symptom of palpitation and in preventing premature beats, which may accompany hypertension. It is also helpful in some patients with intractible angina, as Dr. January and his colleagues at the State University of Iowa reported in the JAMA last year.[2] It prolongs the period of apnea after electro-convulsive shock, and should be discontinued for two weeks before electro-shock therapy is begun.

Gynecomastia is a side effect which occurs in both males and females. It may be painful. Unless it is recognized as a complication of treatment, it may cause a great deal of unnecessary anxiety.

Early in our experience with these drugs, one of our patients had a breast removed for this condition. Lactation or pseudolactation may also occur. Impotence occurs occasionally in males and also in females, although in the latter there may be the opposite reaction.

Some individuals have a considerable increase in appetite, and gain a great deal of weight. This may be a troublesome symptom, particularly in a hypertensive patient. A very few develop a peculiar sort of edema which involves the face and extremities. It can be most troublesome, too, for it does not respond to salt restriction, to mercurials, to thyroid or to any other pharmacologic agent. It disappears gradually after the discontinuance of the medication.[3]

It developed in a 27-year-old woman whom I had had on the usual doses of rauwolfia for many months because of episodes of sinus tachycardia and anxiety. Her urinalysis was normal, and her I^{131} uptake was normal. When rauwolfia was discontinued, it gradually disappeared. Some feel that this difficulty is due to an elaboration of the antidiuretic hormone. There is a great deal of speculation as to why the other endocrine symptoms occur.

Rarely, a so-called "mid-brain" syndrome occurs. This is characterized by fever, ocular palsies and decerebrate movements. It is especially likely to happen if huge doses have been given to an individual with preexisting brain damage.[3]

A Parkinson-like tremor occurs in individuals who have been given large doses for considerable periods of time,[4] but it disappears when the drug is stopped.

Two men from George Washington University have reported marked hypotension and bradycardia occurring during surgery in hypertensive patients who had been on rauwolfia for some months. It was corrected immediately by the giving of an intravenous anticholinergic. They used Antrenyl. It can be prevented, they say, by the administration of twice the usual dose of preoperative atropine or scopolamine.[5] They recommend that rauwolfia, when possible, be discontinued two weeks before surgery. There have been no similar reports that I could find.

The incidence or urticaria or dermatitis as a result of rauwolfia is probably no more than one in 1,000.[4]

So much for the side effects. Dr. Irvine Page, a prominent authority on hypertension, feels that these side effects are so frequent, and so severe and disturbing that he advises only phenobarbital, reassurance, and general measures of social and spiritual readjustment in very mild cases.[6] The elderly arteriosclerotic with a systolic blood pressure as high, perhaps, as 180 or even 200 but a diastolic blood pressure of less than 90 certainly requires no drug treatment.

Rauwolfia is also useful in combination with apresoline, with the ganglionic blockers, or with some of the protoveratrines. It reduces some of the side reactions, permits reductions in dosage of the other drugs, and makes the blood-pressure response more predictable. It can be given parenterally in doses of 2.5 to 5.0 mg. in acute hypertensive emergencies, and when so administered it is much more rapid acting and much more effective than when given orally. Some give 2.5 mg. every six hours, but others give it all in one dose. It requires several hours to produce a marked antihypertensive effect. In the hypertensive crises of toxemia of pregnancy or in acute glomerulonephritis, where a more rapid effect is desired, intravenous hydralazine is indicated, for it not only reduces the blood pressure more immediately but increases renal blood flow. One can, of course, use hexamethonium parenterally, but with great caution because of its drastic action.

Combination tablets are not of any real value in the treatment of hypertension. If one increases the dose of Serpasil-apresoline tablets, for instance, sufficiently to get a real effect from apresoline, the side effects of Serpasil are prohibitive. It is rarely that one can find a combination tablet which really suits a particular patient, if he is treating him correctly. Likewise, combining reserpine with androgen and estrogen in the treatment of geriatric patients doesn't seem to make much sense. Not all of them need to be tranquilized.

Reserpine doesn't lower the blood pressure in everyone, despite the implication contained in statements made by some of the drug houses.

Dr. Page feels that the doctor who prescribes rauwolfia but doesn't follow his patient carefully is on dangerous ground, for while the patient is under the impression that something has been done about his blood pressure and is blissfully enjoying a false sense of security, his disease may be progressing rapidly toward a malignant phase, or at least may be doing irreparable damage.[6]

Reserpine is also useful in some cases of atopic dermatitis, hyperhidrosis and other dermatologic conditions in which emotions are a strong determining factor.[7] Premenstrual tension, the menopausal syndrome and all manner of psychosomatic conditions are also treated with it. But in view of the serious side effects of the drug, alternative forms of therapy must be considered. Where anxiety is a chronic underlying factor, general and perhaps non-pharmacologic measures should be utilized, such as psychotherapy, reassurance, etc.

Thorazine. As Dr. Ravreby has mentioned, Thorazine has four principal actions: (1) profound anti-emetic effect, (2) potentiation of anesthetics, narcotics and sedatives, (3) hypotensive effect, and (4) alleviation of anxiety and tension. It gives patients "a relaxed serenity" and a lack of anxiety about stress and pain, and does so without clouding of consciousness or dulling of the mental facul-

ties, according to its manufacturer. But as one reads the brochures of a company that markets competing products, he finds that one of the troubles with Thorazine is that it *does* dull the mind, whereas that firm's products do not.

Because of its tranquilizing effect, Thorazine has been recommended for use in arthritis, tuberculosis, cerebral palsy and malignancies, since it abolishes the anxieties and frustrations that are associated with those diseases and makes them easier to bear. It has been recommended for use in severe tension headaches. In these, it is perhaps more useful in the ones that have some vascular component—i.e., pulsating headaches. It is reported to be useful in some cases of migraine. Gastrointestinal disorders associated with emotional turmoil are benefited, and it will control the nausea and vomiting associated with any sort of gastrointestinal upset. It has a mild, atropine-like inhibitory effect upon gastric secretions. In causalgia, particularly when emotional factors seem to be triggering attacks, it has been reported to be helpful.

It aggravates grand mal epilepsy, and one must give it with care in individuals who are epileptic, particularly if barbiturates have previously been used in controlling them, and especially if one reduces the doses of barbiturates when he starts Thorazine, for severe grand mal seizures can thereby be precipitated. It may also induce seizures in susceptible individuals who have not been on any medication previously and who have never before had a convulsion.

Nausea and vomiting from almost any cause whatsoever can be controlled with Thorazine—gastroenteritis, uremia, cancer, protracted migraine, Meniere's syndrome, x-ray therapy, hyperemesis gravidarum, aminophylline, digitalis, antibiotics, anesthetics, estrogens, nitrogen mustard, brain tumor and intestinal obstruction. Because it may mask the signs of increased intracranial pressure, digitalis toxicity, appendicitis and intestinal obstruction, one must be careful to make an accurate diagnosis before prescribing the drug for nausea and vomiting. It is useful in alleviating pain from malignancy, arthritis, severe tension headaches, burns, surgery, etc. It relieves anxiety, and by lessening the individual's reaction to pain, it reduces the intensity of his suffering.

When Thorazine is combined with narcotics, equal or better analgesia is obtained than with narcotics alone. If the patient is already on barbiturates or on a narcotic other than codeine (it does not potentiate codeine), the Thorazine has a potentiating effect. The doses of all of these drugs must be reduced to one-fourth or one-half of the previous amount. Likewise, if the patient is already receiving substantial doses of Thorazine, the initial doses of an opiate or barbiturate must be much smaller than those that ordinarily are given.

The dosage of Thorazine usually recommended is 10-25 mg. every four to six hours, initially, and the amount may be increased gradually until the symptoms have been controlled. It has been recommended as a premedication for surgery, particularly in ocular surgery, in fenestration procedures and in pediatric surgery, where apprehension, nausea, vomiting or restlessness might be especially troublesome. Post-anesthetic retching and vomiting are said to be better controlled. It has a minimal drying effort on secretions, but if one really wants to control secretions, atropine or some similar drug is preferable. Because of its reduced bronchial reflex activity there is said to be less laryngospasm, bronchospasm and bucking on the endotracheal tube.

Patients premedicated with Thorazine, however, are prone to develop marked hypotension during surgery, particularly if they previously have been hypertensive. This hypotension may be confused with shock, and may be cause for considerable concern. It can be distinguished from ordinary surgical shock by the fact that the pulse is slow and the nails are pink, despite the fact that the face is pallid and the blood pressure is low. Also, the skin is warm and dry, whereas in ordinary cases of shock it is not. This hypotension is most apt to be serious if a spinal anesthetic is being given. It may require the Trendelenburg position, and sometimes intravenous Levophed. As Dr. Ravreby mentioned, adrenalin is contraindicated, since Thorazine will reverse its effect.

Thorazine is also used as an obstetrical premedication. It is said to result in good relief of anxiety and suffering. The babies have less respiratory depression, good muscle tone and spontaneous respiration in 96 per cent of cases, or so they did in one series at least. Labor may be slowed if the drug is given too early, just as is the case with any other depressant. Hypotension may occur, and whenever Thorazine is given parenterally, the patient must be kept recumbent. It is contraindicated in toxemic, hypertensive obstetrical patients, for they are apt to have a severe drop in blood pressure, which for them might be serious. Spinal anesthetics should be given only by experienced anesthetists if patients have been premedicated with Thorazine, for the hypotension that occurs may require Levophed and a change in position, etc., while there is an anesthetic in the spinal canal.

Hiccoughs often respond to Thorazine. It is recommended that in mild cases the oral route be tried first, and then the intramuscular. If there is still no relief, the drug can then be given intravenously in doses of 25 to 50 mg. in 1,000 cc. of infusion solution. It should be administered very slowly, with the patient flat in bed and with frequent checks of blood pressure.

Severe asthma and status asthmaticus may sometimes be relieved because of the alleviation of the emotional overlay, with perhaps less respiratory

depression than with opiates. Any advantage it may have over barbiturates must be weighed against its disadvantages. Here again, if Thorazine is used in conjunction with barbiturates or any other central nervous system depressant, the dosage of one or both must be adjusted accordingly.

Dermatologic conditions are frequently benefited markedly, according to some reports—particularly neurodermatitis, atopic eczema and psoriasis. However, the drug itself may cause severe skin reactions and urticaria.

It is said to be very useful in alcoholism, but here one must be very careful, for the unstable vasomotor system of the inebriate may favor cardiovascular collapse. Tremors, anxiety, nausea, vomiting, epigastric pain and delirium tremens can be well controlled with intramuscular Thorazine. Parenteral Thorazine should be given to bed patients only, and they should be kept recumbent for half an hour after it has been given. If they are stuporous, they should be allowed to sleep off some of the effects of the alcohol before Thorazine is given to them.

The withdrawal symptoms of drug addiction are said to be much less severe and more bearable when Thorazine is given instead of the usual Methadone. Some recommend its use in tetanus, claiming that large intravenous doses given very slowly will reduce the tetanic episodes to a manageable number—one which will not induce exhaustion of the patient. It is apparently better than treatment with barbiturates and curare-like compounds.

Jaundice is the most publicized side effect of Thorazine. Its incidence is variously estimated at from 0.5 to 3.0 per cent.[4] The drug house brochure says "the incidence is very low." A low-grade fever, with or without grippe-like symptoms, occurring between the fifth and thirteenth day, should alert the physician to the probable imminence of jaundice. Although the patient has no significant pain, and the fever, malaise and anorexia resemble the symptoms accompanying the onset of infectious hepatitis, the liver-function tests are those of an obstructive jaundice. There is a moderately elevated alkaline phosphatase, the serum bilirubin is chiefly direct-reacting. and the flocculation tests are normal. In a few cases, eosinophilia will be associated with the jaundice.

The jaundice may persist for two to six weeks, but in rare instances for several months. There are no sequelae, and the chief danger is that the patient may undergo unnecessary surgery to rule out an extrahepatic biliary obstruction.

Blood dyscrasias are much less frequent and less highly publicized, but are a much more serious complication.

Agranulocytosis has varied in frequency in various series from 0.6 per cent to one in 50,000 cases. There have been 45 reported cases, of which 17 were fatal, and doubtless the number of unreported cases has been several times as great as the number of reported ones. Fever and sore throat preceded the onset in all six cases of agranulocytosis reported among 1,000 patients at St. Elizabeth's Hospital, in Washington, D. C. That was the highest rate in any series that I have reviewed. All patients on Thorazine should be instructed to report promptly for study in the event they develop a sore throat or a fever. Most agranulocytosis occurs after one or two months of treatment.[4]

Parkinsonism may occur, as with reserpine, but it disappears when the drug has been withdrawn. One author continues the drug, but prescribes Cogentin.[4] Patients should be warned that Thorazine potentiates the effect of alcohol, as well as of other sedatives, and that they should not drink, particularly if they are driving cars.[8] Galactorrhea may also occur, as it does with reserpine.

Sparine. As has previously been pointed out, this drug differs from Thorazine only in that one chlorine atom has been removed. Its potency as a central nervous system depressant is thereby reduced to about half that of Thorazine, and hypotension resulting from its administration is mild and infrequent.[9]

No cases of jaundice have been reported. There have, however, been two recent cases of agranulocytosis.[10]

The drug retains all of the tranquilizing actions of Thorazine, and it has the same capacity to induce grand mal seizures in susceptible individuals. It is effective in the control of nausea and vomiting, of drug addiction and of acute alcoholism, and it has a similar potentiating effect upon opiates and sedatives.

It can be given intravenously in fairly large doses with little danger of a severe hypotensive reaction, except in patients who have cerebral or coronary arteriosclerosis, in whom a sudden drop in blood pressure might be disastrous. Fifty to 100 mg. can be given intravenously with a syringe, whereas with Thorazine the intravenous dosage is only 25 to 50 mg., and it must be given in 1,000 cc. of infusion solution. In those cases in whom a serious drop in blood pressure does occur, Levophed again is good treatment.

Sparine bids fair to replace Thorazine in the management of most conditions, but its clinical value and toxic potentials have not as yet been nearly so well tested as have those of Thorazine. The oral or intramuscular dose is 25 to 300 mg. at four to six hour intervals, depending upon the seriousness of the problem and the response of the patient. The dosage can be increased rapidly, though such a procedure would be risky with Thorazine.

Meprobamate (Equanil, Miltown). This drug is used chiefly in anxiety and nervous tension states, and in those conditions where relaxation of skel-

etal muscle spasm is desirable. It is heralded as the answer to all of the anxieties and worries to which mortal flesh is heir, and to be practically non-toxic. It is said to be useful in tension headaches, where both of its actions are helpful. The majority of mild tension headaches are relieved, but severe cases require more heroic treatment. Here, as in all anxiety and tension states, the treatment does not stop with the prescription of a tranquilizer, unless the condition is an acute and self-limited one. The causes of the anxiety or tension should be inquired into, especially if the condition is chronic, and non-pharmacologic remedies should be employed wherever possible. In some cases, neuropsychiatric help will be necessary.

In anxiety and tension states, meprobamate relaxes without dulling cortical function to the same extent as the commonly-used barbiturates. This feature, which often is of great value, has been publicized to such an extent that those who read only drug house brochures, listen only to the detail men, and do not read the journals or do any investigation of their own wouldn't think of using anything else in a nervous patient.

In my own practice, I have given 12 patients who temporarily required some sort of mild sedative two dozen half-grain amytal tablets and two dozen Equanil tablets and told them to take one for three days and the other for three days and so on until they had used them all and then to report to me. Most of them could find no difference. There were only two patients who could tell any difference between the two. One of them thought Equanil was better, and the other thought amytal was better. This may not be true for other types of patients, but even though my series was a very small one and for that reason unreliable, I remain unconvinced that for such patients meprobamate represents a really outstanding advance. The drug is of some value in mild cases of insomnia, and it is said to have about the same order of effectiveness as a half-grain of phenobarbital. Increasing the dosage from 400 to 800 mg. adds little to its efficacy.

It is of some value in controlling alcoholism, and some men feel that it is best used in conjunction with Sparine or Thorazine for this purpose. It is said to be of some value in neurodermatitis, premenstrual tension and other psychosomatic conditions.

It is reported to be a much more efficient adjunct than Tolserol in the treatment of low-back strain, cervical myositis or wry neck, rheumatoid spondylitis, and other conditions where skeletal muscle spasm can cause severe symptomatology. It is claimed that it is by far the most effective muscle relaxer that has so far been discovered, and in my very limited experience this seems to be true.

There is one investigator who feels that it has addictive properties approaching those of alcohol and the barbiturates, but most do not say so.

The drug is of some use in petit mal, but like tridione and the promazines, it is likely to aggravate grand mal. Some feel that although it controls the symptoms of petit mal incompletely, it is advantageous because it does so without fogging the mind, whereas if one gives enough tridione or some of the other petit mal drugs for complete control, the consciousness of the patient is clouded.

The purveyors of these products minimize the allergic reactions, but they do admit that urticaria or erythematous, itchy rash may occur. More severe cases may have fever, fainting spells, angioneurotic edema or bronchospasm. Such responses usually occur in individuals who have had no more than from one to four doses, and have not had previous contact with the drug. Adrenalin, antihistamines and Solucortef are the treatment.

I have had two patients who complained of urticaria, one after the first tablet and the other after the third or fourth tablet. I have heard of one patient who nearly died of bronchospasm. One investigator reported that three of 137 cases developed urticaria and angioneurotic edema.

Friedman and Marmelzat[11] have reported seven cases at the University of California with various types of reactions, including cramps and diarrhea in one case, one purpuric rash, two fixed drug eruptions which could be reproduced in the same location every time that Equanil was given, itching and erythema in two cases, and one case in which diplopia and nausea occurred within an hour after the administration of the first tablet. In addition, two patients developed paroxysmal excitement and nervousness within one hour after taking only one or two tablets.

The skin lesions, interestingly enough, have a predilection for the pelvic girdle area, for the breast, and for the flexor surfaces of the forearms. The authors of the article to which I have just been referring state that several physicians in their area had seen patients with this type of eruption, but none of them had taken the trouble to report them. This inertia on the part of the medical profession is partly to blame for the incautious, widespread use of these drugs.

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PSYCHIATRY

Dr. Sidney L. Sands: Psychiatrists think that the use of these drugs is breeding a social problem.

In perusing a number of magazines like the READER'S DIGEST and TIME, I have found indications of an alarmingly wide acceptance of them by the general public, and in the form of a cartoon in the NEW YORKER, I have run across a really succinct and brilliant summarization of the difficulty. The artist showed two very charming young ladies in a modest state of undress, apparently just returned from the office and getting ready for the evening. One of them, portrayed as somewhat harassed, was telling the other, "I don't know whether to stay home and take a nembutal, or to take a benzedrine and go out."

The problem—and it is certain that the cartoonist recognized it as one, though he chose to present it humorously—is in the misuse, or at least overuse, of modern pharmacologic agents. This is an old, old problem—probably as old as man himself. Upon recognizing that certain drugs in the form of roots, tubers, berries and things of that sort were able to affect him in ways other than dietary, man has chewed betel and cocoa leaves, or has imbibed alcohol or fermented drinks containing a great deal of it, or has adopted other roughly similar means of doing either one of two things: (1) dull his pain and his anxiety, or (2) stimulate himself to go out and meet challenges.

Somehow, it seems that the burdens of life, of existence, are at times so great that we need assistance of these sorts in adjusting to them. Basically, the problem is no different today, though it may be more severe than it ever was in the past. Perhaps the universality of the causes of our tension and our tense reactions have made us fear that we can't quite cope with the stresses and strains without some kind of help.

Of course we don't like to admit that we need to be stimulated to meet the stresses of the day, or that when we go to bed at night we are so wound up that we need help in getting to sleep. In consequence, we often develop a number of auxiliary symptoms which take us to the doctor, and the physician, being wise, recognizes that he is dealing with symptoms of a psychogenic or emotogenic nature. But the doctor is inclined to temporize—to give the patient either one or several of the preparations that will produce a semblance of relief without touching the basic problem. The doctor now has at his disposal very many drugs with which he can play like the conductor of a symphony orchestra upon the nervous system of his patient. He can prescribe ones that will, successively, stimulate him in the morning, calm him down at noon so that he can eat, and then pep him up so that he can meet the clients whom he has to face or conduct his other business affairs, and then, finally, calm him down at night.

From the psychiatric standpoint, there are very many problems involved in the use of these drugs. Certainly the greatest of them can be generalized to include not only psychotic patients in state hospitals but the patients who come to any one of us, regardless of our specialties, and who have some need for help in facing reality. The danger lies in our using the drugs as means of treating the symptoms and forgetting the man himself. If the patient is tense, we calm him down; if he is retarded, we pep him up. We proceed as if, somehow, by altering the patient's observable behavior, we are actually treating his problem.

Now it is true that momentarily in some cases, this actually works as the result of short treatment. Things pile up. The patient gets tense, his sleep-waking cycle becomes disturbed, and it is helpful if we can interrupt this course of events by assuring the patient a couple of good nights' sleep and calming him down during the day. Afterwards, he may be able to take over and manage his own problems. But actually what happens in the vast majority of instances is that the patient has rather deep-seated problems, the manifestations of which may seem to be no different from those of the individual whose difficulties are no more than transitory. Thus, there is too great a temptation for us to give pills indiscriminately, and get patients started with what well may turn out to be virtually a relaxant-addiction. Pharmacology can carry the physician no farther.

Of course, when the particular pill that one doctor has prescribed becomes insufficient in providing the relief that the patient craves, he goes to someone else, and that physician will prescribe another of the pills. Thus the patient is abetted in constantly evading his problem.

In state hospitals that are dealing with large numbers of excited psychotic individuals, I think a rather terrible thing has happened—terrible because it is dangerous. Where there was a ward full of excited, violent patients requiring the attentions and strong-arm methods at times of many attendants and nurses, there now is quiet. Everyone feels that, thank God, there now is a drug that will cure the psychoses. Indeed, these patients sometimes appear to be much better integrated than they were before the drug was administered. But too often this is no more than a surface appearance. The fact that the patient is quiet does not mean that his problems have been solved at all.

Many state hospitals are reporting with great enthusiasm that they have cured schizophrenia, and that their discharge rates have increased by 25, 50 or 75 per cent. A group of psychiatrists, I am sorry to confess, actually went before a Congres-

sional committee and said, "Give us enough money so that we may use these drugs properly in all of the state hospitals, and we will cut your problem by 50 or 75 per cent." This, of course, sounded good to the Congressmen. Fortunately, however, their attention was subsequently drawn to the contraindications for these things and to some other resultant problems, and they didn't accept the offer.

Patients are being released because they are tranquil. They are quiet; they are calm; but that is all. They go home, and they are calm, but their problems have not been solved. New problems have been created, and the drugs have done no more than to mask the real difficulties.

The patients whom I see in my office very often have been on tranquilizers for from six to eight weeks, or sometimes even longer. The drugs are no longer effective, but the patients have become used to getting medication and they can't be without it. Often, therefore, they are angry with me for refusing to let them have pills, but I persist in saying "No" because as soon as they took something and felt a little better, they wouldn't want to face their problems. I encourage them, instead, to experience some anxiety and then to come in and talk about their problems. If I can get away with it, fine. But often the patient goes somewhere else, where he can perhaps get some medical therapy.

I shall not talk about organic conditions, but let me say that for the tense patients whom you see in the general practice of medicine, you certainly are justified in prescribing one of these drugs on a short-term basis. Perhaps it will get your patient "over the hump." But if you neglect to find out who your patient is and what his problems are, or at least direct him to an inquiry, you do him injustice and you practice bad medicine. It is not enough simply to give him something that will make him feel better for a few hours at a time.

For me, the principal use of these drugs is in the patient who wants psychiatric help and wants to work on his problems, but who is so profoundly disturbed that communication is interfered with. I give him one of them for a week or ten days, or at most for two weeks, so as to calm him enough so that he can come in, sit still and talk. In doing that job, I think, the drug achieves its greatest usefulness. After that, I urge the discontinuance of the drug in all of my patients. If after that I haven't succeeded in communicating with the patient, I see no point in continuing the relaxant. It is true that the short-term use of a drug helps to avoid some of the organic complications that might occur.

A number of years ago at a meeting of the American Psychiatric Association, Dr. Max Levin described a number of different kinds of psychoses that he had observed in patients with high spinal-fluid bromide content and serum content. Of course Dr. Levin realized, and his hearers were likewise aware, that something apparently had happened to those individuals—something that was not attributable to the direct metabolic effect of the bromide ion on nerve cells. Instead, the bromide had *uncovered something.*

At just about the same time, Dr. W. D. Paul, at Iowa City, supported by a grant from one of the pharmaceutical companies, was feeding enormous quantities of bromides to normal patients. That is to say, the patients were psychiatrically normal, though some of them were post-surgical cases, some had been hospitalized for medical causes and some were ordinary controls. The spinal-fluid bromide content that he was able to obtain and maintain over long periods of time was anywhere from 50 to 200 per cent greater than that for the group of patients who had been defined as psychotic, and nothing happened to them other than they got a little sleepy.

The problem that this demonstrated is that we have to know *for whom* we are prescribing. Normal people—that is to say, people who are well adjusted, who are not tense—do not come to us for bromides or ataraxics. The people who come have problems. Thus, when we prescribe one of the drugs, if we give it over a long period of time, we may unmask an even more severe disorder because we have taken away the primary defenses that have been available to the patients.

From my standpoint, then, these drugs have a usefulness, but a very limited one. The simpler the drug and the shorter the duration of its use in any particular case, the better. As soon as the drug begins to be the source of happiness, then, somehow or other, we have missed fire on things.

The tensions that beset mankind must, after all, be faced directly if we physicians are to handle them. They can't be mediated through a bottle if we are to help our patients to mature and to learn how to handle their problems satisfactorily.



The Contribution of the Tranquilizing Drugs

And the Dangers in Their Casual Use for Relief of Everyday Tensions

A Statement Prepared by the Committees on Research, Therapy and Public Information of the American Psychiatric Association

The profession of psychiatry recognizes with enthusiasm the development of the tranquilizing and other drugs for the treatment of psychiatric disorders over the past four years. The evidence is that these drugs are effective in making disturbed patients in mental hospitals more readily accessible to treatment. This has made possible impressive advances in mental hospital treatment programs and increased discharge rates. Further, by making patients more comfortable, the drugs have contributed greatly to improving the atmosphere and the management of mental hospitals. It seems clear also that the drugs are useful adjuncts in the psychiatric treatment of certain patients in private practice and on an outpatient basis in clinics and hospitals, though the extent and the conditions under which this practice will prove sound remain to be confirmed through prolonged and careful study.

Psychiatrists are at the same time concerned about the apparently widespread use of the drugs by the public for the relief of common anxiety, emotional upsets, nervousness and the routine tensions of everyday living. It is reported that 35,000,000 prescriptions for the drugs will have been written in 1956, and a market research firm states that three of 10 compounds prescribed most frequently by physicians in 1955 were tranquilizers.* Numerous articles in the public prints may be pointed to as evidence that the drugs are widely viewed as medicines for the relief of everyday tensions.

Casual use of the drugs in this manner is medically unsound and constitutes a public danger. The tranquilizing drugs have not been in use long enough to determine the full range, duration and medical significance of their side effects. Use of these drugs is no more to be encouraged than the use of any other drug except where proper medical diagnosis determines that a drug is indicated to maintain the life and functioning of a person. The prescribing of the drugs for emotional illnesses carries with it an obligation for continuing appraisal and supervision by physicians fully aware of the psychiatric symptoms involved and the potentials of their course of development, alteration or remission.

The full cooperation of the profession in accumulating a body of tested scientific data about the drugs is of prime importance. The launching of comprehensive research programs for the evaluation of the drugs is to be encouraged. This includes such a program as that recently announced by the Veterans Administration, and the programs planned by the National Research Council with the U. S. Public Health Service, and state-wide programs as well.

At the same time, it is important to be aware of subtle pressures that combine to foster public misunderstanding and misuse of the drugs. There is the eagerness of the public, and of physicians themselves, for "good news" about a new treatment for psychiatric disorders. This tends to foster popular stories based on optimistic reports of early and limited research findings with the drugs, before such findings can be reproduced or validated by other colleagues. There is normal competition among pharmaceutical houses to refine, promote and sell their own particular products. This competition should not involve physicians in public relations enterprises directed towards the premature announcement of "successful use" of particular products.

Persons engaged in any form of research or evaluation of therapy should be most dispassionate and objective in their pronouncements. It is suggested that members of the American Psychiatric Association be particularly alert to personal pressures (both internal and external) and that they be circumspect in their announcements of early experimental results with the drugs.

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Chronic Pelvic Pain in Women

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CHRONIC PELVIC PAIN in the absence of positive physical findings all too often challenges the diagnostic skill of generalists, gynecologists. In many ways it is comparable to low-back pain without demonstrable findings. In the past, whenever examination of the patient's back had failed to reveal an obvious cause for such a difficulty, the physician turned his attention to the pelvis, and when—as often happened—he found cervicitis or a retroverted uterus, he was satisfied that he had come up with the answer.

Women by the thousands were subjected to laparotomies, in which uterine suspension was a common procedure. Occasionally the patients experienced relief postoperatively, but many were not helped at all. Those who seemed at first to be rid of their symptoms returned after a few months with the same old complaint, or sought the aid of another physician.

Because of the high failure rate, uterine suspension is no longer regarded as a means of curing low back pain. Retroversion associated with endometriosis is now the only generally accepted indication for uterine suspension, and the operation is performed only in the course of conservative therapy to improve the patient's fertility.

Ninety-five per cent of low back pain has its origin in the spine and is an orthopedic problem. The only two conditions in gynecology that are capable of producing any appreciable backache are pelvic cancer with nodal metastases and pelvic cellulitis.

The patient who has chronic pelvic pain and no positive physical findings within the pelvis constitutes a diagnostic problem. She may be told that she has chronic appendicitis, infected tubes, a retroverted uterus or a cyst on the ovary. Much too often, the doctor then undertakes an exploratory laparotomy, in the course of which he removes a normal appendix, suspends an asymptomatic uterus, or resects a normal physiologic cyst from one or both ovaries. Frequently the ovary itself is sacrificed. If any of the above procedures have already been performed when the patient seeks aid, she is frequently told that her pain is due to adhesions, and before long she is subjected to another laparotomy, at which she is very fortunate indeed if she does not lose some of her organs that are necessary for childbearing. Atlee,[1] in his book CHRONIC ILIAC PAIN IN WOMEN, says, "When I hear the diagnosis of 'cyst' on the ovary as a cause of pelvic pain, I know I am face to face with barbarism."

As a general rule, it can be stated that before one can attribute chronic pelvic pain to any gynecologic disease, one must be able to palpate some abnormality on bimanual examination. Gynecologic disease causing chronic pain is readily palpable and can be felt by any practitioner. If there is any question in the physician's mind about whether or not one or the other adnexa is enlarged, he can be reasonably certain that the pain does not originate in this area. In patients under the age of 40, ovarian masses up to 7 cm. in diameter are seldom neoplastic, but usually represent normal physiologic retention cysts. They seldom, if ever, cause any chronic pelvic discomfort. Certainly these patients should not be subjected to laparotomy, but should be re-examined at the end of a month or two. If by that time the mass has increased in size, then—and then only—should the patient be subjected to laparotomy.

THE PHYSICIAN'S APPROACH TO THE PATIENT

The physician's approach to the patient should be one of sympathetic understanding. The majority of women who complain of pelvic pain have sought the aid of numerous physicians to no avail. Too often, as I have said, one or more surgical procedures of questionable value have been performed. One must make a thorough re-evaluation, including the taking of a complete history and the making of a physical examination with special emphasis upon the character of the pain, its relationship, if any, to menstruation, its location and its response to previous therapy.

Mengert[2] has divided pelvic pain into two main classes: (1) that originating from genital lesions already recognized objectively; and (2) that occurring in women whose pelvic organs are normal. These two, he points out, are pains of intra- and extragenital origin, respectively. He alludes to a third class, "pelvic neuroses." With the advancement of psychiatry, increasing attention is being accorded to it.

Physicians generally have been taught to account for pain on an organic basis, and for that reason they invariably seek some pathology or abnormality of the physiologic process as an explanation for their patients' complaints. Each woman herself is easily convinced that any pain within her pelvis must have its origin within her

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female organs. Too frequently we have been lulled into acceptance of such a hypothesis, and have offered an organic explanation for her complaints, despite the absence of positive physical findings. Our predecessors, when dealing with pain or complaints of obscure origin in other parts of the body, were accustomed to offer "nerves" as an explanation for the symptoms. We have the same symptom complexes with us today, but now we term them "psychosomatic disorders." Perhaps I am oversimplifying the matter, but to some extent, at least, our forefathers were right. They recognized that some physical complaints have no organic cause.

REVIEW OF THE LITERATURE

The unremitting determination of physicians to find a physical cause for chronic pelvic pain in the absence of organic pathology is exemplified by the number and diversity of the articles on the subject that have appeared in the literature. Table 1 lists some of the explanations that have been offered. Some of them are no longer given serious consideration; others are going through a period of popularity; and some are yet to be developed and explored.

TABLE 1

ETIOLOGY OF PELVIC PAIN, PAST AND PRESENT EXPLANATIONS

1. Retrodisplacement of the uterus
2. Adhesions
3. Cystic ovary
4. Chronic appendicitis
5. Chronic pelvic inflammatory disease
6. Chronic cervicitis
7. Chronic parametritis
8. Constrictions of the ureter
9. Abdominal wall neuralgia
10. Colitis
11. Pain originating in the cecum
12. Varicosities of the broad ligament
13. Pelvic congestion, with or without fibrosis
14. Orthopedic referred pain
15. Psychosomatic difficulty

The one thing that these diagnoses have in common is that they have no association with definite positive findings in the pelvis. The first four of them—retrodisplacement of the uterus, adhesions, cystic ovary and chronic appendicitis—have been fairly well exculpated. But even today, too many laparotomies are being undertaken as the result of one or another of those diagnoses.

Mengert[2] has pointed out that the pathologic conditions responsible for pelvic pain are generally similar to those which cause pain elsewhere in the abdomen. They include peritoneal irritation, traction on the peritoneum, distention of a viscus or a tissue space, pressure, spasm and rupture of some visceral organ. Rapid distention of an enclosed space may cause pain, whereas slow filling permits a relatively painless hypertrophy. A chronic salpingitis rarely produces significant pelvic pain, unless there has been a recent flare-up of the infectious process, and the diagnosis should not be made in the absence of positive physical findings such as palpable adnexal masses. Patients who have palpable adnexa due to chronic inflammatory disease usually seek medical aid because of sterility or menstrual irregularities, rather than because of chronic pain. If there are no palpable adnexal masses, and if the sedimentation rate and white blood count (including a differential) are normal, a diagnosis of chronic pelvic inflammatory disease is unwarranted.

Theobald[3, 4] has attached great significance to the condition of the cervix, and feels that this organ is the origin of many cases of lower abdominal pain and backache. He advocates cauterization of the cervix with a silver nitrate stick, and states that such a procedure done on an apparently healthy cervix may give as satisfactory results as cauterization of a grossly infected one. By this procedure he claims that relief can be secured from such other complaints as dyspareunia, frequency and urgency of micturition, stress incontinence of urine and dysmenorrhea after childbirth. It has been difficult for most practitioners either to reproduce Theobald's results or to share his enthusiasm.

Fluhman[5] estimates that "chronic parametritis" accounts for six per cent of all patients seen by the gynecologist. He states further that it is predominantly a disease of active sexual life, with maximum frequency between the ages of 25 and 35. Of 54 patients with this diagnosis, he says that 40 had lower abdominal pain as a presenting complaint. Other symptoms were dyspareunia, backache, dysmenorrhea and pain on defecation. In 34 cases there was an associated inflammatory lesion of the cervix. The diagnosis was established by a demonstration of thickening and marked tenderness of one or both sacro-uterine ligaments. The recommended treatment consisted of attending to any cervical pathology and the use of hot sitz baths or hot water douches for 20 minutes once or twice daily, except during menstruation. Of 33 patients so treated, cures were obtained in 14 and improvement in 13. The remainder apparently received no relief of their symptoms.

It is well known that strictures of the ureter can be associated with referred pain to the pelvis. Some investigators have attempted to use that as a basis for explaining chronic pelvic pain in the absence of definite physical findings. Their dilatation of ureters has seemingly led to improvement in some patients, yet it is highly doubtful that constrictions of the ureter can have produced chronic pelvic pain in the absence of other urologic findings.

Eller[6] discusses lower abdominal pain which is somatic and not visceral in origin. He points out that this syndrome of pain and tenderness originates not in the abdominal viscera but in some irritative lesion of the spinal nerves supplying the abdominal wall, and he recommends the use of paravertebral block as a means of diagnosis and therapy.

Atlee[1] states that chronic iliac pain due to abdominal wall neuralgia usually has been present more or less steadily for months or years. It tends to be sharp and shooting, rather than cramp-like, although it may be just a dull neuralgic ache. It is not accompanied by such digestive symptoms as anorexia, nausea, vomiting or change in the function of the bowels. He further states that the nerves involved are usually D-12 or L-1. The area of tenderness on the anterior abdominal wall is usually somewhat oval, the long diameter following the course of the nerve.

There is a fair amount of evidence, he goes on to say, that some of the chronic pain and tenderness in various parts of the abdomen results from some irritation of the large bowel, the two most commonly affected sectors of which seem to be the cecum and the sigmoid. Two conditions seem to play a part in producing this entity: (1) constipation and (2) irritating food products and purgatives taken for relief from constipation. These latter appear to set up a localized colitis or spasm, and may actually increase the constipation which they were taken to cure. Atlee has called the following series of symptoms the "cecal syndrome": (1) right, left or bilateral iliac pain located over McBurney's point, (2) constipation for which roughage or irritating purgatives have been taken, (3) tenderness over McBurney's point or over an area on the left side slightly higher up, (4) bloating in the cecal region which the patient may describe as an actual tumor that comes and goes, (5) gaseous indigestion, and (6) pain in the lumbar region of the back in the muscle area, more or less opposite the area in the front where pain is felt.

Some authors have felt that varicosities in the broad ligament cause stasis resulting in lower abdominal pain. Taylor[7] has reported recently on 100 cases of "pelvic congestion." The predominant incidence, he found, was in women in their twenties and thirties—i.e., early in the middle period of ovarian function. Low abdominal pain, the principal complaint, was characteristically suprapubic, usually more marked on one side, constant but variably severe, and made worse by fatigue, standing, sexual intercourse and nervous strain. Secondary dysmenorrhea was present in over half. There was frequent low back pain, often worse in the premenstruum and after standing. Dyspareunia, though rarely a primary complaint, was one of the most frequent symptoms. About half of the patients were subjectively aware of excessive cervical secretion. Taylor states that nervous tension or emotional instability was a complaint in two-thirds of the cases, and chronic fatigue was frequent and severe. Tenderness was the principal sign and was thought to be difficult to evaluate, since physical findings appeared slight in relation to the survey of subjective complaints. Hypertrophy of the uterus, either temporary or permanent, was noted in about one-third. Ovaries were "somewhat enlarged" in a fourth, and "tender" in over one-half. The cervix nearly always showed some hypersecretion. The most definite physical sign was parametrial tenderness elicited by direct palpation of the utero-sacral ligaments through the posterior vaginal fornix, or by placing the examining fingers behind the cervix and lifting it toward the symphysis. This was confirmed by rectal palpation. It is to be noted that these are approximately the same physical findings that others[5] have used as a basis for a diagnosis of chronic parametritis. Taylor has felt that the disorder was most likely due to a disturbance of vascular function. He thinks it might have a psychosomatic basis, but that pelvic circulation was being affected by physiologic factors such as the steroid hormones, anatomic supports of the uterus and posture.

Duncan and Taylor[8] have reported on a psychosomatic study of pelvic congestion in 36 patients. They found that most of them had been members of large families (average number of children 4.6). Three had been only children. Twenty-nine complained of lack of affection and security in their early years, and each described an unsatisfactory childhood relationship with her mother. All of the patients were emotionally immature and had strong dependent needs. All but five displayed anxiety, and all but 10 were subject to periods of depression. Two-thirds of the married women had married before the age of 20, and only six had satisfactory marital relationships. In seven patients, pelvic congestion began in relation to some family crisis, and in 34 its beginning was related to emotional stresses.

Many doctors feel that chronic pelvic pain can have its origin in orthopedic disorders. Shands[9] says in his textbook on orthopedic surgery that in acute sacro-iliac affections there may be a point of tenderness in the abdomen midway between the umbilicus and the anterior superior iliac spine on the affected side. Homans[10] says in his textbook on surgery that the pain in lumbosacral sprains may be referred either to the inguinal region or through the upper lumbar nerve roots to the fronts of the legs. Pitkin[11] has said in discussing orthopedic causes, "Pelvic pain which regularly accompanies physiologic relaxation of the female pelvis and precedes menstruation is thought to be a hormonal disturbance. It is so common that many women accept it as unavoidable. Relaxation of the intrapelvic joints is one of the commonest causes of pelvic pain in women. Other causes are disturbed function of the pelvic and lumbar joints, muscles and ligaments such as that caused by sprains or strains. Pelvic pain can also result from structural changes in the pelvic and lumbar spines such as that caused by congenital defects, fractures, degeneration of intervetebral discs, arthritis or neoplasm. Disturbed function of the

lower extremities such as flat feet can be responsible for pelvic pain."

Mengert[2] has pointed out that relaxation and strain of the pelvic girdle produces many and varied symptoms. In all, there is generally a basic undercurrent of low backache, although pain in the pelvis frequently assumes priority and the complaint of backache is elicited only after direct questioning. Sometimes the patient erroneously supposes her backache to be the consequence of dysmenorrhea, especially if it is brought to her consciousness only by the menses. Painful periods frequently elicit complaints of two types of discomfort: a generalized pelvic ache, heaviness or bearing down; and the more specific cramping of essential dysmenorrhea. Mengert has further pointed out that many cases of lower abdominal pain are due to sacro-iliac strain. He says, "It is now generally accepted that the overwhelming majority of backaches and sciaticas during pregnancy are due to pelvic girdle relaxation. Less well established is the relationship between relaxation and lower quadrant abdominal pain. My attention was directed to this some years ago, when strapping of the back of a pregnant woman relieved annoying bilateral anterior pain. Reasoning that similar conditions might prevail in the nonpregnant woman, I began to examine backs in cases of extragenital pelvic pain."

Rubenstone[12] likewise believes that many cases of chronic lower abdominal pain have their origin in the back. He reported on a sign differentiating abdominal pain, the parietal, from intra-abdominal origin. The technic of obtaining the sign is simple: "The test is performed as follows," he says. "With the patient lying on her back, palpation of the abdomen establishes the area of maximum pain and tenderness. Without taking the palpating fingers from this area, the examiner turns the patient on her side so that the pelvis rests on the iliac crest. (It is well not to have the mattress too soft.) Even deeper palpation over the same area will elicit little or no discomfort if the pain is referred from the sacro-iliac or lumbosacral joints of the same side. Turning the patient on the opposite side will usually aggravate the pain. The patient is then placed on the abdomen, and the sacro-iliac joints are palpated. Invariably, tenderness is elicited, sometimes over the entire area of the joints or a portion of it. Sometimes the tender point is sharply localized so that one must carefully and patiently press over the entire area of the joints in order to establish the local tenderness. It is often necessary to use very firm pressure to elicit this tenderness. It is sometimes spot-like."

An explanation of the relief from abdominal tenderness and pain when the patient lies on the same side is probably to be found in the temporary immobilization of the affected joints and a lessened skin hyperasthesia due to reflex nerve transmission. It was constantly found that pain of intra-abdominal origin was not relieved when the patient was turned on one side or the other, but even markedly aggravated. In patients with abdominal pain due to bilateral sacro-iliac strain, relief from the pain was always obtained on the side on which the patient rested. When patients suffered not only from sacro-iliac pain but also from intra-abdominal conditions, there was no relief from pain on change of posture.

Some people believe that muscular weakness of the abdominal wall results in musculoskeletal imbalance affecting primarily the lower back, with resultant referred pain to the lower abdomen. Additional studies must be made regarding this hypothesis, but it can be safely stated that patients suspected of having this symptom complex can often benefit markedly from weight reduction and progressive resistance exercises designed to improve the muscular tonus of the abdominal wall and the lower back.

Functional pelvic pain due to psychosomatic causes can best be handled and evaluated by the patient's family physician. He is frequently in close contact with other members of the patient's family, and having treated the patient frequently for other disorders, he is in a good position to evaluate her emotional stability and tensions. Cooke,[13] in his presidential address to the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, very aptly pointed out that up to a certain point the mental processes of men and women are alike, but beyond that point there are diversions to an ultimately extreme degree. In women, far more than in men, thoughts and mental activities are dominated by the reproductive factor and its side issues. Reproduction is the central physiologic reason for their existence. Marriage is normally her goal and life work, and disappointments and annoyances of the menstrual and reproductive cycles are constantly of supreme importance to her.

It is interesting to observe that the majority of women who consult physicians because of chronic lower abdominal pain are married and in the active period of their reproductive life, between the ages of 25 and 50. One rarely has occasion to examine a patient beyond the age of 50 because of chronic abdominal pain for which there is no evident pathology. Prior to the age of 25, the patient usually has not been married long enough to encounter serious marital conflicts, nor has she had sufficient time, usually, to produce enough children so that her excessive fertility has become a worry to her and her husband.

Crossen[14] has stated that the pelvic organs are the seat of the most compelling of human emotions —love. According to some authorities, this powerful emotion, with its many ramifications, begins in intrauterine life and continues in various forms through infancy, adolescence, marriage, mother-

hood and the menopause. Its interplay with other emotions is most frequently evidenced in the symptoms of pain, menstrual or otherwise, premenstrual tension, dyspareunia and frigidity. Many women live in fear of an unwanted pregnancy, and are constantly being reminded of their reproductive process by the monthly presence or absence of the menstrual period. Since so much attention is constantly placed on the pelvic reproductive organs, it is not difficult to understand why functional disorders are so frequently related to the pelvis. Crossen comments on the emotional aspect of obstetrical and gynecologic problems in his text, and he quotes Manly *et al.* Basically, it can be stated that an emotionally immature, dependent personality, when faced with certain situational stresses, develops an unresolved conflict and anxiety. This, in turn, produces an imbalance of the autonomic nervous system or a chronic increased autonomic tension. The imbalance of the autonomic nervous system manifests itself through certain local effects on the muscular and vascular system. Systemic effects are also produced by pathologic impulses through the hypothalamic tracts to the pituitary gland, adrenal glands and ovaries. Psychosomatic disorders manifest themselves as pain, backache, dysmenorrhea, dyspareunia, vaginismus, frigidity, *et cetera ad infinitum.*

The diagnosis of chronic pelvic pain due to a psychosomatic disorder is not always easy. Alvarez[14] contends that "the harder it is to get a clear history out of a person, the less likely he or she is to have organic disease." These patients bring in many irrelevant facts; indeed they have written all of them down. Instead of answering questions that have been put to them, they insist upon giving their own interpretations of their symptoms and speculating upon a diagnosis. Events in the history are apt to be related in an emotional manner. According to Croger and Freed,[15] the manner in which a patient describes her symptoms is a useful index in the diagnosis of functional pelvic pain. If she complains of a dull, dragging pain in the lower abdomen—one that she has had difficulty in localizing but which is always worse when she is tired—one can be reasonably sure that he is dealing with pain of emotional origin.

INNERVATION OF THE PELVIC ORGANS

The uterus, tubes and ovaries are innervated from the autonomic nervous system, and sensations from them are produced in the same fashion as visceral sensations from the intestine, liver or spleen. The parietal peritoneum, vagina and the external pudendal regions are innervated by myelinated fibers and pain sensations that originate directly from these areas. Mussey and Wilson[16, 17, 18, 19] have written extensively on the innervation of the pelvis. The following is their summary: "The pelvic viscera are supplied by the sympathetic fibers from the hypogastric (presacral) plexus, with the exception of the ovary and the upper part of the broad ligament, which are supplied by similar fibers accompanying the ovarian artery by way of the aortic plexus. Somatic innervation consists of the pudendal nerves and branches of the anterior and posterior rami of the spinal nerves, which supply the perineal structures and abdominal parietes, respectively. The sacral autonomic outflow (parasympathetic) contributes the nervi erigentes to the pelvic viscera. The functions of the parasympathetic system are physiologically the direct opposite of the sympathetic system. Anatomically and physiologically, the autonomic nervous system is divided into the thoracolumbar (sympathetic) and cervical sacral (parasympathetic) outflow. Investigation of visceral pain has been concerned mostly with the function of nerve fibers found in the sympathetic outflow; the exact sensory function of the parasympathetic outflow seemingly has not been fully determined."

Kroger and Freed[15] refer to this procedure as pelvic viscera reaches the consciousness through somatic afferent nerve fibers called the viscerosensory nerves, ones which have nothing in common physiologically with the true sympathetic nervous system. From the pelvic viscera, these nerves pass upward in the sympathetic chains, and then into cell stations in the posterior root ganglia. At their proper level in the spinal cord, the stimuli are integrated and distributed. The viscerosensory nerves contain afferent axons from the internal organs and are to be distinguished from true autonomic or visceral motor fibers. They differ from the somatic sensory fibers in that they are smaller and fewer. Because the threshold of viscerosensation is consequently higher, the average individual has trouble in localizing pelvic pain with any considerable degree of accuracy.

The theory of referred visceral pain and the mechanism of visceromotor and somatomotor reflexes have been discussed by Hensey and Phillips.[20] They have postulated that visceral afferent impulses may inhibit or facilitate muscular reflexes, or change the threshold in the spinal cord to afferent painful impulses from the periphery, for they terminate in the same groups of neurons (a neuron pool).

Alexander[21] has described sympathetic conduction pathways which enter the cord over the anterior routes. These pathways are independent of the sympathetic trunks and may offer an additional route for sensory impulses from the pelvic viscera. We must keep in mind that no pain can be perceived when the afferent sensory impulses are received from a viscus and from a nearby somatic region, if either one alone is subthreshold. However, if both of these impulses reach the identical portion of the cord at the same time, then the stimulus is sufficient to cross the threshold,

and as a result a consciously localized sensory impulse is set up, usually in the somatic rather than in the visceral region.

The mechanism by which the pain is transmitted from the sexual organs is not clearly understood, and additional work must be done in that area. Mussey and Wilson,[16, 18, 19] believe that when the normal selective function of the nutrient cell stations in the posterior horns of the cord are weakened by vitiating disease or by "nervous exhaustion," many stimuli which would ordinarily be inhibited reach the consciousness with abnormal ease. We can theorize that a summation of subthreshold stimuli which would not individually attract attention can then reach the consciousness and be interpreted as pain.

THERAPY

Although some authors[7] do an occasional operation on the reproductive organs for chronic pelvic pain in the age group past 35, and though others[22] have felt that sympathectomy is indicated, most gynecologists recommend that surgery not be done in the absence of definite pelvic pathology and when pain is the sole indication for such therapy. The musculoskeletal system, especially that of the lower back, should be carefully scrutinized for evidences of abnormality. Supportive, conservative therapy is usually indicated. Progressive resistance exercises are beneficial in some cases. Pelvic pain of this origin is primarily an orthopedic problem, and pelvic surgery is always no more than meddlesome.

The diagnosis of pelvic pain due to psychosomatic disorders is not always easy. Therapy is frequently long and difficult, and too often the results are disappointing. The physician must be sympathetic in his approach to the patient, and he must gain her confidence. She must be made to leave his office feeling that he understands something about her problem and is prepared to offer help.

Matthews and O'Brien[23] have emphasized that she must be made to feel that the doctor understands how much her symptoms—psychic or otherwise—bother her and interfere with her daily life and happiness. Such an attitude leads her to work better with the physician in finding out about her difficulty. Successful therapy depends upon the emotional relationship that is established between therapist and patient. This relationship fosters growth *toward* maturity, and therefore cannot be based upon an appeal to reason.

Suggestion can help women with minor conflicts. Sometimes common-sense advice is enough to correct many difficulties. The patient should be permitted to talk freely. Patients who have psychic problems nearly always reveal them during the first interview, if they are permitted to talk. Recommendations and suggestions are made as to how emotional conflicts, disturbances, inadequacies, fear, etc. can be overcome. With a little expenditure of time and tact on the part of the physician, it has been estimated that better than 80 per cent of these patients can be helped without the aid of a psychiatrist. The remainder should be referred to such a specialist.

Kroger and Freed,[15] refer to this procedure as "supportive therapy." The average physician can go one step further by employing "insight therapy." In the latter procedure, the principal therapeutic factor consists of exposing the patient to the same (although less severe) emotional problems that she has previously been unable to face—the ones against which she developed neurotic defenses. In the treatment situation, she is encouraged and taught to handle them without unhealthy reactions.

Cases involving more complicated psychoanalytic therapy are best referred to a psychiatrist.

SUMMARY

I have made an attempt to review some of the literature, past and present, related to the problem of chronic pelvic pain in the absence of significant physical findings. Fifteen different entities or syndromes have been offered as possible explanations for the patients' complaints.

Confusion and differences of opinion reign supreme. Rational therapy cannot be instituted in the absence of a positive diagnosis. Where there are no positive pelvic findings, chronic pelvic pain can probably best be explained on either an orthopedic or a psychosomatic basis. Each patient with chronic pain in the pelvis should have a thorough evaluation of her lower back, so that it may be determined that there are no significant orthopedic problems present.

Unfortunately, most of us are insufficiently trained in psychiatry to decide that the pain is psychosomatic without first eliminating all of the possible organic causes for the patient's complaints. But our suspicions concerning the possible functional basis of the patient's complaints can and should be aroused during the process of history taking. After we have ruled out all organic disease to the best of our ability, we cannot necessarily assume that the patient's complaints have a purely psychosomatic basis, for the negative information which we have gleaned means merely one of two things—either that in our present state of knowledge we have been unable to demonstrate the true nature of an underlying organic pathology, or that the patient's complaints have a functional basis.

Although there is little doubt that chronic pelvic pain is psychosomatic in a large percentage of cases, one must take care not to make such a diagnosis when the true explanation lies in the deficiencies of our knowledge concerning the symptom complex. Examples of this erroneous reasoning can be found in some of our texts deal-

ing with psychosomatic gynecology. Many think that dysmenorrhea is entirely psychosomatic. Once again, although it is undoubtedly true that much of dysmenorrhea is functional, Sturgis and Albright have shown that many cases can be adequately relieved by the inhibition of ovulation.

In the absence of positive physical findings and after all psychosomatic factors have been ruled out, some authorities have felt that an occasional exploratory laparotomy is indicated in the patient with chronic pelvic pain. Some perform hysterectomies if the patient is more than 35 years of age, and others do presacral sympathectomies. Indications for such procedures are questionable, and it is probable that the majority of these patients can be adequately handled without surgery. Culdoscopy, with direct visualization of the pelvic organs, may have some value as a basis for the physician's reassuring the patient that there is no organic disease.

CONCLUSIONS

The patient with chronic pelvic pain in the absence of positive physical findings remains one of the most confusing and difficult diagnostic problems in gynecology. Although many explanations have been offered, it is believed that the majority of cases are due either to psychosomatic disorders or to musculoskeletal imbalances, with referred pain to the pelvis. Exploratory laparotomies incorporating such procedures as hysterectomy, salpingectomy, oophorectomy and uterine suspension are to be condemned in the absence of positive pathologic lesions and when chronic pain is the only indication for such surgery.

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RISE IN COSTS OF MEDICAL CARE

Overall medical care costs for American families rose 1.5 per cent during the third quarter of 1956, according to a study that has been made by the U. S. Bureau of Labor Statistics. But fees charged by physicians in the three-month period that ended in September increased by only 0.8 per cent.

The overall cost of living increased 0.7 per cent. Medical care costs, when drug costs were excluded, increased 0.9 per cent. Other changes in the cost-of-living index included: general practitioners' fees, up 0.8 per cent; obstetrical care, up 1.7 per cent; prescriptions and drugs, up 0.7 per cent; and dentists' fees, up 0.16 per cent. Important factors in the rise in medical care costs were a 4.2 per cent increase in hospital rates and a 3.9 per cent rise in Blue Cross fees.

BE MY GUEST

Doctors are entitled to deduct entertainment expenses, taxmen concede.

The AMA complained that some revenue agents have been disallowing deductions by physicians for business entertainment on the ground that such expenditures are "unethical." In a letter to the Revenue Commissioner, the AMA protested that "there are circumstances under which a professional obligation may rest on a physician to entertain other physicians." The same tax standards apply to doctors as to other professional and businessmen, said the AMA.

The Revenue Service's audit division chief agreed in a letter of reply that deductions by doctors are not automatically disallowable as a matter of law. But he noted that since the AMA failed to cite specific examples of when such outlays might be deemed proper, the Service would have to feel its way, deciding each claim on its merits.

—THE WALL STREET JOURNAL, December 19, 1957, page 1.

Iowa Maternal Mortality Study For 1953 and 1954

MADELENE M. DONNELLY, M.D., M.P.H.

DES MOINES

A TOTAL OF 127,160 live births occurred in Iowa during 1953 and 1954. There were 73 deaths related to pregnancy among the mothers of those infants, and thus the maternal death rate was 5.74 per 10,000 live births.

Those 73 deaths, and nine that were not related to pregnancy, were carefully reviewed by the Maternal Mortality Reviewing Board of the Iowa State Department of Health, and case studies of all of them are to be published serially in the State Department of Health sections of succeeding issues of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY. The following is a summary of the information that was obtained, and a commentary upon it.

The maternal death rate of 5.74 per 10,000 live births for the two-year period is apparently higher than the rate of 4.00 reported for the preceding year.* The study of deaths related to pregnancy was instituted in 1952, and it is apparent that some deaths were not reported or were not picked up when the death certificates were searched for that first year.

The maternal death rate apparently increased with the age of the mother (Table 1), and was

TABLE 1

DEATHS RELATED TO PREGNANCY

Rates per 10,000 Live Births by Age of Mother

Iowa, 1953-1954

Age of Mother	*No. Live Births*	*No. Maternal Deaths*	*Rate*	*Standard Error*
20	12,059	2	1.7	±1.2
20-24	41,761	17	4.1	±1.0
25-29	36,347	18	5.0	±1.2
30-34	22,544	17	7.5	±1.8
35-39	11,032	14	12.7	±3.4
40+	3,291	5	15.2	±6.8
Total	127,160	73	5.7	±0.7

lowest for those mothers pregnant for the second or third time (Table 2). The actual numbers of deaths in this series are so few that variations in rate may not be statistically significant, but they are consistent enough to designate a trend.

The deaths related to pregnancy are grouped according to cause of death (Table 3). This classification was based on what was felt to be the underlying or actual cause of death, and in some cases it was difficult to determine a single cause. The cause of death was confirmed by autopsy in 27 (37.0 per cent) of the cases.

TABLE 2

DEATHS RELATED TO PREGNANCY

Rates per 10,000 Live Births by Parity of Mother

Iowa, 1953-1954

Parity	*No. Live Births*	*No. Maternal Deaths*	*Rate*	*Standard Error*
0	31,260	23	7.4	±1.5
1	34,892	9	2.6	±0.8
2	27,322	12	4.4	±1.3
3+	33,388	27	8.1	±1.6
Total	127,160	73	5.7	±0.7

TABLE 3

CLASSIFICATION OF DEATHS RELATED TO PREGNANCY

Iowa 1953-1954

Classification	*Number*	*Rate per 100,000 Live Births*
Hemorrhage	19	1.49
Toxemia	14	1.10
Sepsis	13	1.02
Systemic Disease	8	0.63
Cardiac Disease	6	0.47
Abortion	6	0.47
Cerebral Hemorrhage in Puerperium	2	0.16
Anesthesia	2	0.16
Suicide	2	0.16
Embolic Phenomenon	1	0.08

It was felt that only 25 (34.3 per cent) of these deaths were non-preventable, and preventability was questionable in another 5 (6.5 per cent) of the cases. Case histories were prepared with great care, but the Reviewing Board encountered difficulties in reviewing from protocols, and in consequence had some trouble in arriving at decisions in some instances. Many facets of each case had to be considered before preventability could be established.

Whenever there had been any inadequacies in treatment of the patient at any time during her pregnancy, labor, delivery or puerperium, it was felt that theoretically her death should have been prevented.

In place of reviewing individual cases here, the Reviewing Board has felt that it would be better to outline adequate care from early pregnancy

Dr. Donnelly is the director of the Division of Maternal & Child Health, Iowa State Department of Health. The reviewing board which is referred to consists of Dr. H. A. Weis, of Davenport, Dr. C. W. Seibert, of Waterloo, Dr. J. H. Randall and Dr. W. C. Keettel, of Iowa City, and Dr. A. W. Brown, of Des Moines, in addition to Dr. Donnelly. The author wishes gratefully to acknowledge the help of those other doctors in the preparation of this report.

* J. IOWA M. SOC., 44:244-251, (June) 1954.

through delivery and postpartum, and emphasize standards of maternity care which should be followed in each case.

PRENATAL CARE

Every potential mother should be taught early that adequate prenatal supervision is necessary to insure safety for herself and her baby. In Iowa, more than two-thirds of all pregnant women report to a physician in the first trimester of each pregnancy. In this group of mothers who lost their lives, only 45.2 per cent did not see the doctor until late in pregnancy, and 6.8 per cent had no medical care until the condition that caused their death was far advanced.

Eight mothers refused to follow the recommendations of their physicians, and a ninth mother retained such a resentment toward her pregnancy that she failed to follow any of the advice that had been given her. In five instances, death was the direct result of an abortion which had been induced by another party or by the patient herself.

In spite of the fact that some of the inadequate care in the prenatal period was due to neglect on the part of the patient, it must be emphasized that every physician must assume definite responsibility for the education of parents, and his service to the pregnant woman must be of such quality that it will maintain the confidence of the patient and her family.

When a patient reports for prenatal care, the physician must do three things: (1) he must obtain a complete history, particularly of any past pregnancies; (2) he must examine the patient thoroughly; and (3) he must discuss with the patient the prognosis of her case, and explain in detail what she must do.

History of the Patient. The past history of the patient is of utmost importance in anticipation of the progress of the present pregnancy. Any patient who has previously had an abnormal pregnancy or labor, such as one complicated by toxemia or postpartum hemorrhage, must be followed very closely. In two cases in this series, even though the patients had given histories of stormy courses in previous pregnancies, they were not followed closely during their current pregnancies.

Examination. A general examination of the patient is as important as the taking of pelvic measurements. Any existing condition must be completely evaluated and treated, if necessary, by a specialist. In this series of maternal deaths, there were three patients with severe cardiac conditions who did not have complete evaluation of their cardiac pathology during the pregnancy. As a result, it was felt that they did not have the type of supervision and treatment that was warranted.

Two patients with existing diabetes were likewise not evaluated and were not kept under control.

Another pregnant woman developed an acute hepatitis which was not adequately treated and which eventually led to her death.

One patient died of a chorio epithelioma which followed a hydatid mole. The chorio epithelioma was not demonstrable by curettage, and autopsy showed that it did not penetrate to the uterine mucosa. Had periodic quantitative titres been made on urine specimens, the condition might have been diagnosed early enough so that death could have been prevented.

Another patient developed acute appendicitis during her early pregnancy. She was also suffering from scleroderma which one would not expect to be amenable to treatment. A review of her history revealed that at the time of the acute appenditicis she had had pus and red blood cells in the urine. After the patient's release following appendectomy, no treatment had been given her for that condition.

Any unusual signs in a pregnant woman must be followed closely. Some ectopic pregnancies are impossible to diagnose by palpation, but reviews of the histories of two patients who died from hemorrhage following the rupture of an ectopic showed that one had had repeated attacks of abdominal pain, and the other repeated attacks of severe nausea. In both of these women, the symptoms had been severe enough to require hospitalization on more than one occasion. In otherwise healthy young women, these symptoms should have aroused more suspicion than they did.

In the third case of ectopic pregnancy, what was felt to be an ovarian cyst was palpated in the first examination. It is felt that any suspicious ovarian cyst should be investigated at the proper time in the pregnancy.

Preparation of the Patient. After the patient has been examined, the physician should feel it his responsibility to discuss with the patient her conduct throughout the pregnancy and to forewarn her of any possible dangers. In two cases, rupture of the uterus following previous cesarean section was felt to have been the cause of death, and it was not clear whether or not the doctor had adequately forewarned the patient to report any abdominal pain or distress immediately. With the general increase in frequency of cesarean section, the possibility of uterine rupture must be kept in mind, and patients must be given specific instructions on what they should do about any unusual symptoms.

Termination of pregnancy is a controversial subject, and it is difficult to discuss. However, if any condition exists which definitely indicates a termination, it too should be discussed with the patient. In this series, there were five cases in which it seemed that termination might have been indicated. However, information is not available as to whether or not the physician had considered this procedure or talked it over with the patient. These cases include a multiparous woman with long standing diabetes, a multiparous woman with a preeclampsia superimposed on a chronic hyper-

tensive vascular disease, a woman with severe hypertensive vascular disease who had previously been warned against pregnancy, a multiparous woman with severe cardiac damage and one who had been in cardiac failure two or three years before the present pregnancy.

Prenatal Care After the Initial Examination. When the prenatal patient returns for her regular visits, she should have the benefit of services such as routine blood pressure, weight recording and urinalysis, in addition to an examination by the physician and a conference with him regarding her progress. Results of these tests must be entered on her prenatal record.

It is best for a doctor to do as much of the examination as he can, but if he is so busy that the nurse must do some of the procedures, he himself must see the patient and review the findings while she is in his office.

COMPLICATIONS OF PREGNANCY AND LABOR

In each of the 14 cases of toxemia, the patient showed progressive symptoms of preeclampsia, but in no instance did the doctor give adequate treatment. There seemed to be a tendency to allow the patient to stay at home, to continue her activities and to manage impending symptoms by means of a questionable diet and ammonium chloride. Whenever a patient shows albumin, sudden weight gain, or increasing blood pressure, it is best that she enter the hospital, where she can be managed completely. If this is not possible, she should be seen very frequently. In some of these cases, the patient herself refused hospitalization, and in one instance the patient was so obstreperous that it is felt the physician not only would have been justified in asking to be released from the case, but should have done so.

Toxemias of Pregnancy. Once a patient has been diagnosed as having a preeclampsia or a toxemia, and has been admitted to the hospital, she should be given an opportunity to improve or stabilize before her pregnancy is terminated. In most cases, these patients are close to term, and labor can be induced by simple rupture of the membranes. In some instances where preeclamptic patients were hospitalized, it is felt that the treatment included the use of too many fluids and too heavy sedation, and that the pregnancy was terminated hastily, before treatment had been adequately instituted.

Ectopic Pregnancy. An ectopic is an emergency which warrants interference in face of other complications. A cul-de-sac puncture usually supports diagnosis, and if blood is returned, surgical intervention is imperative. In one case, surgery was delayed because of the precarious condition of the patient due to cardiovascular disease and obesity. In a second case, diagnosis was obscured by the suspicion that the patient had attempted an abortion. In a third case, after cul-de-sac drainage, surgery was not attempted because of severity of an intra-abdominal infection.

Peritonitis. One case showing typical symptoms of peritonitis was not taken to surgery immediately because laboratory and x-ray findings hadn't been conclusive. This demonstrates the need for prompt intervention when a patient at term has severe, prolonged pain associated with vomiting. In another case with apparently mild peritonitis, overzealous administration of fluids and the use of Wangensteen suction apparently caused an electrolyte imbalance which hastened the patient's demise.

Diabetes. A diabetic woman who becomes pregnant demands careful supervision and usually should have her pregnancy terminated sometime between the thirty-fourth and thirty-eighth week, depending upon the presence or absence of complications. Not every diabetic woman requires termination, but those who are difficult to control, who are developing large babies, who are having symptoms of toxemia or hydramnios should have their pregnancies terminated before term. When surgery is required, it must be remembered that these patients are unstable, and a very flexible type of insulin should be used. In one case where surgery was needed, it was preceded by the administration of NPH insulin, and as a result, it was impossible to control the diabetes following surgery. In one complicated case of diabetes, efforts were made to terminate the pregnancy early, and the physician felt that he was terminating it at about the thirty-eighth week. However, the infant was close to 6,000 Gm. in weight by that time.

INDUCTION OF LABOR

Inductions of labor are done with increasing frequency, and it is felt that they are not always indicated. The following instances demonstrate the unwarranted induction of, or interference with, progressing labor.

1. The patient presented herself in the doctor's office at term with heavy vaginal bleeding, and the membranes were ruptured by the physician. It is felt that this delivery should not have been stimulated until the patient had been admitted to a hospital, where emergency care would have been available.

2. Intravenous pitocin was given to a multipara with partially dilated cervix because she had gone past her due date. As there were no indications for an immediate induction in this case, it is felt that a simple amniotomy should have been done first. In most cases, such a procedure will accomplish an induction.

3. A patient presented definite indications for an induction, but in addition to an amniotomy, she was given 26 mns. of pituitrin in divided doses, plus an ampule of pituitrin in 1,000 cc. of fluid. It is felt that this was an excessively large amount

of pituitrin, and that if an oxytocic drug is to be used, pituitrin is not the drug of choice.

4. Repeated medical inductions were done on a patient because she thought her membranes had ruptured. It is felt that this was not an indication for induction, provided the patient was receiving prophylactic antibiotic therapy.

5. A patient failed to go into labor within two days after her due date, and was uncomfortable. Induction was accomplished by quinine and pituitrin. It is felt that there was no indication for an induction in this case, and that neither quinine nor pituitrin is the drug of choice for this purpose.

6. A patient was in active labor and was bleeding. Labor was hastened by manual dilatation of the cervix and repeated doses of pituitrin. There were no indications for interference with this labor, and the patient would have benefitted from more vigorous blood replacement.

7. An obese multipara with a severe hypertensive vascular disease was in active labor upon admission to the hospital, and was given repeated doses of pituitrin. As this patient was in labor with apparent progression, there was no need for hastening delivery.

8. An obese patient had fairly severe symptoms of preeclampsia, and induction was indicated. Because the cervix was not ripe for amniotomy, medical induction was given, but it failed. A week later, a second attempt failed, and the patient was allowed to go home. Labor started after still another week. By that time, an abruption of the placenta had occurred. In this case, if it were impossible to rupture the membranes, the pregnancy should have been terminated earlier by section.

SELECTION OF TYPE OF DELIVERY

It must again be emphasized that choice of delivery at the time of a catastrophe may be influenced by many factors. However, the type of delivery was questioned in 17 cases, as follows:

1. An attempt was made to apply forceps when the cervix was dilated to only 7 cm. No evidence was available which pointed to any need for immediate delivery, and it is felt that delivery should have been delayed until the second stage had been reached.

2. After failure to apply low forceps, a diagnosis of hydrocephalus was made, and delivery was accomplished by version and extraction. The physician felt that Catholic hospital rules prohibited any other procedure. It was pointed out to him that these rules permit the drainage of a hydrocephalus before delivery.

3. A frank breech delivery six weeks before term was converted to a footling, and as a result, the uterus was ruptured. It is felt that there was no indication for breaking the breech. First, it had descended and was presenting well, and second, the baby was small.

4. A patient had severe bleeding at the onset of labor and was delivered in an unlicensed maternity home. No delivery should be attempted, especially in the presence of abnormal symptoms, where emergency equipment and blood are not available.

5. In four cases with hemorrhage, delivery was hastened before blood had been made available. Later attempts to give blood were fruitless, whereas before delivery, when the condition of the patients was not so critical, veins could have been entered.

6. Pituitrin was administered to a severely hypertensive obese woman already in active labor. Delivery was accomplished by mid forceps. There had been no indications for hastening delivery, for the fetus was dead, and the patient would have benefitted from supportive treatment and delayed delivery.

7. There were 10 cesarean sections in this series. There was considerable discussion concerning the timing or use of section. The following excerpts from cases demonstrate this point.

A. Section was done after cardiac arrest. Until the patient could recover from the trauma of cardiac massage, delivery was of secondary importance.

B. In two cases of early toxemia, sections were done hastily, before the patients had had a chance to stabilize.

C. Sections were done on two cardiac patients and on two patients with hypertensive vascular disease. It is felt that although their chances were poor, delivery from below would have produced less trauma.

D. The indication for section in one patient was sterilization. Sterilization is never an indication for surgical delivery.

E. The indication for section in one case was a twin pregnancy with a brow presentation of the first twin. No trial of labor was given. Such a position is usually transitory, and conversion to vertex or face could be expected after a few contractions. Then it could have been delivered from below.

INSTITUTION OF INCIDENTAL SURGERY

In two elective sections and in a laparotomy for control of an ectopic pregnancy, incidental surgery was done. It is judicious to refrain from incidental surgery whenever a delivery is done through the abdominal route.

DELAY IN REOPENING AFTER SURGERY

In two cases—one an ectopic, the other a repeat section with abruption of the placenta—the patients showed definite signs of shock and hemorrhage, but in both cases there was delay in reopening the abdomen. If the patient shows shock following surgery of this type, the source of hemorrhage must be found immediately.

ANESTHESIA

There were several discussions about the choice of anesthetic agent and the use of certain combinations of anesthesia and oxytocics. The following points were agreed upon.

1. It must be emphasized that Trimar is to be used only as an analgesic. Thus, the patient must be allowed to control the inhalator. If a second person does so, the flow of gas cannot be so controlled, and the patient may become anesthetized.
2. If a spinal anesthetic is used, ergotrate is contraindicated. Following the use of cyclopropane gas, pituitrin is likewise contraindicated.
3. If a patient is under heavy sedation or does not breathe well, any general anesthetic is contraindicated. Under the same conditions, a spinal anesthetic is also contraindicated, for it will be impossible to judge the height of anesthesia in a patient who does not react well.

BLOOD REPLACEMENT

Hemorrhage remains the leading cause of maternal death. It must again be emphasized that the 1-2-3 of treating hemorrhage is to find the source of bleeding, to control it, and to replace blood with blood.

Among the six cases of postpartum hemorrhage, the cavity of the uterus had been inspected in only one case.

Among the 19 patients who died from hemorrhage, only five had received adequate blood replacement. In several cases, blood was given, but the amount given didn't even approximate the measured loss. In other cases, no blood or substitute was started until two or more hours after hemorrhage had been recognized. In three cases, blood substitute was given, and although there was a remission period adequate for obtaining matched blood, no efforts were made to do so.

Hemorrhage in the immediate postpartum period was unobserved in three cases. This oversight emphasizes the need for hospital procedures and technics which will insure constant supervision of the postpartum patient.

POSTPARTUM CARE

In general, postpartum care was good, but there were a few exceptions. One patient had had a recognized cerebral hemorrhage prior to pregnancy and another episode during pregnancy. She was given ergotrate and was allowed to ambulate soon after delivery. It was felt that her history had warranted more conservative postpartum care.

Another patient had had a severe cardiac involvement and a stormy prenatal and postnatal course. Largely because of economic factors, she had been dismissed on the twelfth postpartum day. In this state, plans could have been made for her continued hospitalization, and probably welfare agencies could have assisted the family in providing better care.

The nursing supervision of postpartum cases is questioned in three instances. The women died from hemorrhage, and the physicians had not been notified until the patients were moribund. It is felt that these patients must have been evidencing signs of blood loss over a considerable period of time, and that closer nursing supervision would have assured earlier intervention.

RESPONSIBILITY OF HOSPITAL ADMINISTRATION

Several of these cases pointed out inadequacies in the service offered at a hospital, such as a shortage of help in the obstetrics suite, an inability to find emergency equipment, and a lack of whole blood. In several instances, vital information was unavailable because nursing charts were incomplete. Such inadequacies should be reported to hospital administrators, and they should be urged to correct the deficiencies.

The medical staffs of some hospitals are subject to criticism for not maintaining and enforcing regulations regarding consultations for complicated cases or surgical deliveries.

CONCLUSIONS

After closely studying this series of 73 deaths related to pregnancy, the Maternal Mortality Reviewing Board feels that the following recommendations are in order.

1. Every physician should strive to educate each of his patients to the importance of prenatal care and should call upon other health agencies for assistance. When a patient fails to follow advice, the doctor should accept the responsibility for approaching the patient and her family, or he should ask to be released from the case.
2. Any pregnant woman with a systemic disease should have a complete evaluation early in her pregnancy, preferably by an appropriate specialist.
3. Any unusual symptom in early pregnancy must be followed closely.
4. Early preeclampsia is best treated by hospitalization, and delivery should be instituted at the optimum time.
5. Inductions should be done only for medical indications. Use of simple rupture of the membranes will usually induce labor.
6. Delivery need not be hastened in most cases, and should never be done where there are no emergency facilities.
7. Although the use of cesarean section is being extended, it still should be done only if indicated and only after obstetrical consultation.
8. Obstetrical consultation should be sought more frequently in difficult cases. Other specialists should be used for some complications—i.e., a cardiologist for a cardiac patient, or an internist for a diabetic.
9. When deliveries are surgical, all incidental surgery should be avoided.

10. In any difficult case, the physician should be assured that blood is available and should start it early. Every hospital should maintain an emergency supply of type "O" Rh negative blood. If it becomes necessary to use a blood substitute, it must be followed by whole blood.

11. Whenever a patient shows signs of bleeding or shock, the uterine cavity and birth canal must be inspected thoroughly.

12. After a surgical delivery, there should be no delay in reopening the abdomen if the patient shows signs of internal bleeding.

13. Care must be used in the choice of anesthesia and in the use of certain drugs following spinal or cyclopropane anesthesia. The patient in shock must be carefully evaluated before a choice of anesthesia is made.

14. The physicians who do obstetrics must work closely with their hospital staffs to assure themselves that their patients are receiving a good quality of hospital and nursing service.

15. Physicians must work to obtain more autopsies on patients whose deaths are related to pregnancy.

State University of Iowa College of Medicine

Clinical Pathologic Conference

October 17, 1956

SUMMARY OF CLINICAL FINDINGS

A 54-YEAR-OLD MAIL CARRIER was admitted to University Hospitals because of low-back pain. One month previously, he had noted a dull aching pain immediately after missing a step going downstairs.

He had been treated with diathermy, but the pain became progressively worse and radiated around the flanks into the lower abdomen. An x-ray film taken of his spine at that time was reported to him as normal. He was hospitalized in his home town, and the x-ray studies that were made of his gallbladder, gastrointestinal tract and kidneys showed no abnormalities. But the pain progressed in severity, and the patient required opiates for his transferral to University Hospitals.

The patient had had bronchial asthma at age 14, renal colic at age 34 and hepatitis at age 52.

Physical examination revealed a well-nourished man who, though lying flat in bed, complained of back pain and avoided all movement. His body temperature was 100.5°F., rectally. The blood pressure was 160/104 mm. Hg. Movements during the examination aggravated his pain. There was tenderness over both flanks, lower abdomen, right testicle, left upper thigh and lumbosacral area. No masses or muscle spasm was noted. A maculopapular eruption at the level of L3 extended to the right flank in a band 2 cm. wide. This extended 5 cm. to the left of the midline. All extremities moved normally. Examinations of the heart and the lungs were normal.

Examination of the blood revealed a hemoglobin of 15.8 Gm. per 100 ml. and a white cell count of 24,000, with 82 per cent neutrophils. The sedimentation rate was 34 mm. per hour. The bone marrow was normal. The urine was normal and negative for Bence-Jones protein. Agglutination tests for brucellosis and typhoid fever were negative. Total serum proteins and alkaline phosphatase were normal.

An x-ray film of the chest was reported as healthy, and a gastrointestinal series revealed a normal stomach and duodenum. IVP's showed lateral displacement of the right kidney. X-ray films of the spine showed a wedging of the body of the first lumbar vertebra.

The back pain remained, and after a few days of hospitalization, x-ray therapy was directed to L1. It produced no relief.

One week after admission, an exploratory abdominal operation was performed. A mass pushing the right kidney and adrenal anteriorly was palpated. Numerous needle biopsies were attempted before a satisfactory specimen was obtained. Pathologic study showed that this specimen had come from a normal kidney.

The pain persisted postoperatively. Bilateral leg traction gave some relief. A week later, a right costrophrenic needle biopsy was done. The patient was then treated with nitrogen mustard. In two weeks he still had severe pain and was losing urinary and bowel sphincter control. At that time, a bilateral anterolateral cordotomy was done at T1-2 for relief of pain. Postoperatively, he had hypalgesia below the level of the nipples, and pain was relieved. After the operation, there was flaccid paralysis of the right leg. Later, the left leg also became flaccid.

The patient developed an elevation of temperature to 102°F. and pyuria. He died three weeks later.

CLINICAL DISCUSSION

Dr. Robert C. Hickey, Department of Surgery: Because this patient first felt low back pain immediately after missing a step while going downstairs, there is some possibility that trauma was a factor in this case.

The protocol has shown us that the patient was a 54-year-old mail carrier and that he had pain in the lower back—not an uncommon entering complaint. His past medical history doesn't help us. His illness had begun one month before he was first seen here, and he died within two months after his admission. Thus, whatever it may have been, his disease process was a fulminating one.

The laboratory data offers us no help in diagnosis, other than to suggest the possibility of hemoconcentration. Perhaps the patient had been febrile and slightly dehydrated, for all of the laboratory abnormalities could be explained on that basis. From the intravenous pyelogram, we note lateral displacement of the right kidney and its ureter, and also a wedging of a vertebra anteriorly. Wedging is a phenomenon that is frequently associated with trauma. Here we know only that something occurred which caused the vertebra to be fractured. The stomach and the duodenum were interpreted as normal, and we assume that the duodenal loop was entirely within normal range.

Our information points toward some lesion in the retroperitoneal area. Some of you may have more data than the protocol has provided us. We should like to know what retrograde pyelograms may have shown, and we should also like a description of the excretion pattern of the calyces in the kidney. In addition, some information regarding perirenal air insufflation or even, possibly, an aortogram might help us.

As a possible diagnostic aid, the x-ray therapy might have been directed to the relief of arthritic pain in the "wedged" vertebra. If so, the patient probably would have had an exacerbation of pain following the administration of the x-ray, and some relief shortly thereafter. If there were a tumor in the vertebra—a tumor such as a myeloma, an osteogenic sarcoma or a lymphoma (I use the term *lymphoma* in its broadest application)—x-ray, by and large, should have provided the patient some relief. But perhaps his physicians didn't wait long enough for that to occur. Besides, there is a possibility that the maculopapular rash referred to in the protocol may have been herpes, and x-ray therapy has been known to give relief in that condition.

Our attention is constantly directed toward the retroperitoneal space in this patient. First, we might consider an aneurysm. But the protocol tells us that the mass was on the right side—an unlikely location for an aneurysm. Though the neurologic changes could have occurred with the dissection of an aneurysm and thrombosis, I think that an aneurysm can be excluded. I also think that a specific infection can be ruled out on the basis of subsequent events as they are related in the protocol. Therefore, it seems to me, we must suppose that this man had a tumor of some type.

It is unlikely that this process was a hematoma resulting from the acute trauma that befell the patient a month before his hospitalization. Indeed, if a tumor is found to constitute the principal pathology in this case, we can be sure that the trauma incident to our patient's fall served no more than to call attention to it.

Ewing has posed five postulates dealing with the relationship between trauma and cancer, and I shall use them as headings for my evaluation of this case. (1) *Proof of Injury.* The injury that this man may have suffered was insufficient to produce this wedging of the vertebra. (2) *The Law of Boundaries.* Our case satisfies this one of Ewing's requirements, for we know that the trauma did occur in this specific fracture area. (3) *Previous Integrity of the Part.* We have no information on this point. (4) *Compatible Histologic Pattern.* As yet we know nothing about the histologic pattern. (5) *Suitable Time Interval.* We think that the time interval of a month is insufficient. There are some agents, such as infections, which will produce cancer when they act through trauma or constant repetition of trauma over a considerable period of time. But here the trauma, as was mentioned initially, served merely as an attention-attracting force.

Now prior to undertaking an operation, the members of the Department of Surgery seek help from one of the radiologists. I'm going to ask Dr. Gillies to review the films in this case.

Dr. Carl Gillies, Department of Radiology: The films of the patient's spine demonstrated an obvious fracture of the first lumbar vertebra. It looked like a pathologic fracture, for the vertebra had a moth-eaten appearance. I think the patient's misstep produced this break in a previously weakened vertebral body.

A retrograde pyelogram showed both renal pelves and calyces fairly satisfactorily. I think that the evidence of right lateral displacement of the right kidney was equivocal. The left and the right kidneys were shown about equidistant from the spine. Stereoscopically, it was evident that the kidneys and ureters were displaced forward, and that finding was indicative of a retroperitoneal mass.

The film of the chest was entirely negative except for the incidental finding of a healed primary tubercle. The lungs were clear, showing no evidence of metastasis or heart disease.

My diagnosis is a secondary neoplasm involving the body of the first lumbar vertebra, with a superimposed pathologic fracture.

Dr. Hickey: Now, a mass apparently arising in the retroperitoneal space was pushing the right adrenal and the kidney anteriorly, and the mass

was biopsied. A needle was used for the biopsy apparently for purposes of convenience and also, in all probability, so as to avoid dissemination of the neoplasm. A satisfactory specimen was thought to have been obtained.

May I discuss some of the problems that are associated with needle biopsies? In general, there are two types of needle biopsies. One is the Silverman, by which a core of tissue is brought out. With the other, in which any of various needles is employed, tissue is aspirated by means of a suction syringe. In needle biopsy, every attempt is made to facilitate a histologic, rather than a cytologic study. After the specimen has been obtained by either method, it is imbedded within a small piece of Gelfoam,® which serves as an artificial stroma. In consequence, we are able to make a histologic examination with some semblance of the architecture preserved, rather than a cytologic study such as might be obtained if the specimen were smeared on a slide. At times this procedure is difficult to perform, and in any event, an adequate answer to the clinician's questions depends upon the adequacy of the sample.

There is a possibility of another interpretation for the kidney tissue biopsy. Certain of the extragenital teratomas can arise in this area. They arise in the mid-line, and in the past we have had one which arose adjacent to the superior mesenteric vessels, but it presented to the left. I don't believe that the lesion in this patient was a teratoma, but if it had been, it could have undergone a very malignant change, and presented itself as a highly anaplastic neoplasm and brought about much the same sort of hospital course as the one which this man is known to have had. I have never known of a case in which a teratoma was indistinguishable from an adult kidney. We shall ask the pathologist whether any such thing is possible, but I don't expect him to say that it is likely.

The anatomic area which we shall have under consideration is the retroperitoneal space. There, we have the pancreas, the duodenum, the kidney and adrenals, the vertebral structures, and then the broad retroperitoneal spaces with the various tissues of mesodermal origin and the urogenital ridge tissues. We're faced with the task of deciding what lesion might run the course that this one did. It seems virtually certain that it was a tumor either of epithelial or of mesodermal origin.

As regards the locale of epithelial tumors arising in this area, we must consider the pancreas. If the site were the pancreas, the tumor would have to arise in the head, for it would appear to me that one arising in the body or in the tail would not present on the right. But if it were a tumor of the head of the pancreas, our patient should sometime or other have had an episode of jaundice, and it would appear, too, that there should have been some widening within his duodenal loop. Also, the bony changes that have been observed—that is, the destruction of the vertebra—probably would be anomalous if his were a primary pancreatic neoplasm.

Next, though I understand that 333 primary carcinomas of the ureter have been reported, I don't believe that this is the 334th, for the ureter was not blocked. Before I saw the retrograde pyelogram, I had no evidence that the possibility of hypernephroma of the kidney could be excluded. Now it appears to me improbable that the kidney was the source of the primary tumor, although metastasis from a kidney tumor to the bone remains a possibility.

We first looked to the lumbar vertebra as the site of the presenting disability. A myeloma might have developed there, and the negative Bence-Jones is by no means conclusive evidence to the contrary, for though Bence-Jones protein is positive in 70 per cent of patients having myelomas, there are by like token 30 per cent who have negative Bence-Jones protein. Besides, a pathologic fracture is the presenting symptom in about 60 per cent of myeloma patients. In general, these people have a low blood pressure and a high globulin, and deep x-ray therapy tends to help them.

As for other possibilities, metastatic carcinoma in the vertebra deserves serious consideration, but our patient belonged to an age group for which osteogenic sarcoma is quite unlikely.

If I may interrupt this differential diagnosis for a moment, I should like to point out that postoperatively this patient's pain persisted and bilateral leg traction gave him some relief. A week later a right costrophrenic needle biopsy was obtained, and apparently a diagnosis was made on that basis, for he was subsequently treated with nitrogen mustard. In two weeks, he still had severe pain and was losing control of his urinary and bowel sphincters. I should assume that this means there was further involvement in the region between L1 and S2, for apparently the loss was gradual. But there are many lesions in the spine or cord that could produce this symptom complex.

Then a bilateral anterolateral cordotomy was done at the level of T1. This is the standard level for relief of pain in such a patient. He had satisfactory relief of pain below the level of the nipples, but after the operation, paralysis occurred. Now unfortunately we don't know whether this right-sided paralysis occurred immediately, or was merely a continuation of the neurologic deficit which he had been presenting. If it occurred immediately, I should presume that it might have been a complication of the operation, but if it occurred later, it would more likely have been a continuation of the neurologic process.

Now let us resume our consideration of the differential diagnosis. We were considering the possibilities of hypernephroma or renal tumor, but I think that we can exclude that on the basis of the x-rays. Other primary tumors that are about equally common in the retroperitoneal space are

malignant lymphomas, various sarcomas or other dedifferentiated malignant tumors having histologic patterns that are difficult to interpret.

This patient then developed a temperature elevation of 102°F., some urinary complications ensued and he died three weeks later. I think that the cause of death will be disseminated retroperitoneal neoplasm, probably with involvement of more than one vertebra. He will be found to have had a very severe infection of the genitourinary tract involving both kidneys, possibly dilatation of the ureters and probably some bladder involvement. Some evidence of bronchopneumonia will of course be found.

I still haven't stated what I think is the likely tumor diagnosis. As I said, kidney lesion was rather high on the list of possibilities, but I now think it is rather unlikely. I am placing melanoma rather low, but definitely including it among the possibilities. I incline rather strongly toward selecting malignant lymphoma, for I have seen such a course occur with involvement of the lumbar vertebra and the general train of events which this patient presented, and I should include in the malignant lymphomas the reticulum cell tumors as well as the lymphoblastic sarcomas and such. I should give very strong consideration to a lymphoma as the cause of the disease, and then give somewhat less weight to the sarcomas or the undifferentiated malignant lesions which might arise from the urogenital crest.

Student: What were your indications for using nitrogen mustard here?

Dr. Hickey: I must remind you that physically I was as far from this patient as you are. The second series of needle biopsies had revealed a tumor that either was undifferentiated or belonged to the lymphomas. Presumably nitrogen mustard was used to treat it, and no doubt also for pain relief.

Dr. Paul M. Seebohm, Internal Medicine: Does the fact that irradiation failed to relieve the pain constitute proof that the fracture of the vertebra was not due to neoplasia?

Dr. Hickey: Remember that this patient wasn't observed for very long following the x-ray therapy. That consideration should be borne in mind in so far as this case is concerned, but of course the question is generally a valid one and deserves an answer. Dr. Hamilton, would you care to offer one?

Dr. Henry E. Hamilton, Internal Medicine: If I understood Dr. Seebohm's question correctly, he asked whether the patient's failure to respond to x-ray therapy to the fractured vertebra—his failing to get relief from pain—means that the fracture wasn't pathologic. I don't think so.

Dr. Hickey: I don't think they waited long enough.

Dr. Ignacio V. Ponseti, Orthopedics: If the patient had a fracture, he would still have pain.

Dr. Edward E. Mason, Department of Surgery: Would we be helped in making our diagnosis if, in the absence of a fracture, we knew that irradiation had eliminated pain from a lesion in the vertebral body?

Dr. Hickey: I should think that it would. I think that in cases involving certain lesions, for example Ewing's tumor, patients get definite relief from pain following the administration of x-ray. In an entity such as hypertrophic arthritis, the patient will usually have exacerbation of pain at first. Then shortly thereafter, he has some relief from pain. The fact that metastatic carcinoma of the breast tends to follow this pattern offers us some hint regarding the nature of the lesion.

But I should like to remind Dr. Ponseti, if I may, that a patient with a fracture does not have pain if the fracture is immobilized. Is that not true in general?

Dr. Ponseti: That's right. Pathologic fracture of the vertebra may have either of two causes, either infection or tumor. If it has been caused by tumor, it will usually respond well to x-ray therapy; if it has been caused by infection, it will not.

Dr. Hamilton: Dr. Hickey, you assume that this patient had a disseminated neoplasm. Would you expect to find this hemoglobin of 15 Gm.?

Dr. Hickey: I think it entirely possible. The illness, in so far as we know, had gone on for only one month when the hemoglobin determination was made. I'm not altogether sure of the accuracy of the laboratory data as regards the absolutely correct proportions, for the patient was mildly febrile at the time. I think that the hemoglobin level was by no means distinctly abnormal.

Student: Would you comment on the hypertension (160/104) with respect to the kidney involvement?

Dr. Hickey: I attach no significance to it. It was the initial examination, and thus may have been somewhat higher than it was somewhat later in the patient's hospital course. And I am not aware that renal tumors in general produce elevations in blood pressure. I think that the hypertension in this case was just coincidental.

Dr. George E. Perret, Neurosurgery: What do you think was the indication that prompted the general surgeon to do a laparotomy?

Dr. Hickey: The indication was the absence of a positive diagnosis. Secondly, there was good radiographic evidence of a tumor in the retroperitoneal space, but before any specific palliative or curative therapy could be given to this severely ill patient, a definite diagnosis had to be made. Therefore, surgical exploration was undertaken.

Dr. Raymond G. Bunge, Urology: What is the evidence for ruling out a bronchogenic carcinoma with metastases to the hyperrenal retroperitoneal space?

Dr. Hickey: There were repeatedly negative radiographic examinations of the chest. We have

no evidence of cough such as would indicate a small lesion that might produce irritation, and we have no evidence of blood. I don't believe that those were purposely omitted from the protocol. The destruction of the vertebra could have been the result of a metastatic lesion, and of course a primary pulmonary carcinoma would be very high on such a list. That's a possibility.

I should like, now, to add to my list of reasons that prompted the surgical group to explore this patient. The intravenous pyelograms showed lateral displacement of the right kidney, and x-rays of the lumbar spine showed wedging of the body of the first lumbar vertebra.

Dr. Mason: The surgeons explored the abdomen in order to get needle biopsies of the retroperitoneal area. Would't it have been easier for them to get needle biopsies directly from the peritoneal area through the patient's back?

Dr. Hickey: In retrospect, it seems that it might have been, but such may not have been the opinion of those who saw the patient in his preoperative state. I couldn't answer that question, and wouldn't attempt to.

Dr. Mason: Perhaps the pathologist will tell us whether such specimens are often, or no more than infrequently, diagnostic.

Dr. Jack M. Layton, Pathology: I shall try to answer some of your questions first.

According to the clinical record, the needle biopsy was done because the physicians in charge of the case were not sure whether the disease represented neoplasia or some granulomatous inflammation, and if it did represent neoplasm, whether it was primary in the retroperitoneal space, in the head of the pancreas or in some other site. Aud because of the uncertainty as regards the nature of the process, it was thought that a transabdominal approach was most likely to provide material for a definitive diagnosis.

The next question concerns the efficacy of "needle" biopsy. I should say that the success of an aspiration or "needle" biopsy depends in great measure upon the degree of cooperation between the surgeon and the pathologist. If each has an interest in the procedure, and does his very best to obtain a satisfactory specimen and to prepare it properly for examination (including fixation, processing, etc.), the value of the procedure may be very great. But if cooperation is less than perfect, the experience with aspiration biopsy is likely to be unfavorable indeed.

Dr. Hickey has indicated that he would like to know whether the specimen that was reported to contain normal kidney tissue could, in reality, have come from a teratoma. Tissues and organs may be reproduced with some degree of fidelity in teratomas, but glomeruli and tubules of renal tissue have been seen only occasionally in teratomas, and in no instance have they been organized to the degree encountered in the specimen presently under discussion.

At autopsy, the abdominal organs were displaced ventrad by a massive retroperitoneal neoplasm. Kidneys, ureters, adrenals, pancreas and the major abdominal blood vessels were encased in the mass. A complete transverse pathologic fracture of the first lumbar vertebra had occurred through neoplastic tissue. Neoplastic deposits were noted in other portions of bone marrow, the left parietal pleura, the lungs, stomach, small intestine, liver, thyroid gland, abdominal lymph nodes and psoas muscle. The neoplasm was a malignant lymphoma of mixed lymphoblastic and reticulum cell types—a very immature type of malignant lymphoma.

In the region of the vertebral fracture, the spinal cord was very soft and hemorrhagic, and the cordotomy wounds in the region of the first and second thoracic segments were present.

Lymphoma had infiltrated and spread along the cord, both extradural and subdural. In the region of the fracture, there was considerable ischemic necrosis of the cord, particularly of the anterior funiculus and associated tracts. There was malignant lymphoma in the bone marrow around this site, and in the section at the margin of the fracture, there was extensive necrosis of neoplasm.

Hydrothorax was present in the left pleural cavity, and old, fibrous adhesions were noted over the bases of both lungs.

Old and recent infarcts involved the subendocardial zone of the left ventricle and the posterior wall of the left ventricle. Severe atherosclerosis of the coronary arteries considerably reduced the caliber of the lumina of these vessels.

From the protocol that you were given, the infarction might have been entirely unsuspected. If one reviews the clinical record, however, one finds that on the day just after the cordotomy, the patient became hypotensive and remained so for a matter of three or four days. The correlation between the histologic features and the time sequence of healing of infarcts, as we know it, suggests that this infarct was three to four weeks old. This finding suits very well with the period of hypotension in the patient's clinical course.

In addition to the lymphomatous infiltrates, pyelonephritis and hydronephrosis were present in the kidneys. The hydronephrosis had developed rather late, and was probably associated with the massive lymphomatous infiltration of the right ureter which produced partial obstruction and subsequent ectasia.

Hemorrhagic cystitis was very severe. The febrile course was due chiefly to pyelonephritis secondary to urinary tract obstruction produced by partial occlusion of the ureter by lymphoma and, although there is no reference to it in the protocol, by hypospadias. Apparently it had been very difficult to manage the urinary output.

The inferior half of the lower lobe of the right lung was the sight of bronchopneumonia and rather severe hemorrhagic necrosis. The immediate cause of death was a massive pulmonary embolism.

Dr. Mason: The elevated blood pressure has not been explained. Dr. Bell, in his book on renal disease, shows excellent correlation between hypertension and the degree of arteriolar nephrosclerosis. If this patient did not have arteriolar nephrosclerosis, suggesting a chronic hypertension, then tumor infiltration into the kidney must be considered as a cause for renal hypertension.

Dr. Layton: I neglected to state that the patient did have arteriosclerosis.

I have been asked, "Why the flaccid paralysis?" I shall refer that question to Dr. Meyers, who worried considerably over that problem at the time.

Dr. Russell Meyers, Neurosurgery: The hospital record indicates that the paralysis under discussion followed the cordotomy operation by seven or eight days. It was of a so-called "lower motor neuron," rather than of a "upper motor neuron" type. The question should now be raised as to whether the paralysis is imputable to some complication of the operation or to an independent process such as an inexorable invasion of the spinal canal by the neoplasm which, prior to operation, had given rise to some sensory-motor paralysis and thus forecast a progressive neurologic disability.

Although the evidence at hand does not permit any final conclusion, it permits a plausible inference that the latter interpretation is the correct one. The presence of so-called "lower motor signs" might seem, upon first encounter, to assure us that the insult responsible for the paralysis must have been delivered to the lumbar enlargement and conus medullaris of the cord, or the cauda equina, or both. Such circumstances would be consistent with the demonstrated neoplastic involvement of a vertebral body at the corresponding level(s) of the spinal canal. Yet, to repose complete confidence in this interpretation would be unjustified, inasmuch as quickly-delivered insults to the neuraxis at any of its levels—cortical, capsular, brain stem and spinal cord—are regularly followed by the classical signs of lower motor neuron disorder, namely a flaccid state of the somatic muscles and arreflexia. Such signs are conventionally described in states of "spinal shock" and "diaschasis," regardless of whether the etiology is mechanical trauma, circulatory derangement of various sorts, or fulminating infection of the epidural, subdural and/or intramedullary regions. Hence, although the operation for relief of intractable pain—bilateral anterolateral cordotomy—was performed at the level of the D3-4 vertebrae (where an unexpected complication might damage only the "upper motor neurons" of the lower trunk and limbs), the advent of a "lower motor neuron" type of paralysis gives us no assurance that the site of insult must have been low in the cord or at its cauda equinal roots.

Let us now weigh the evidence. Edema inevitably develops at the operative site. Knowing this, the surgeon "staggers" his bilateral incisions, interrupting the spinothalmic tracts on the one side —say the left—at one level, perhaps D3, and the corresponding tracts on the other side—the right—at one or two segments higher or lower than the first incision. In this way, he avoids concentrating edema at any one level. Postoperative edema is considered usually to reach its peak on the third or fourth day, and to recede thereafter. Inasmuch as, for a full week following cordotomy, the patient whom we are discussing exhibited no neurologic disabilities beyond those recorded preoperatively, and since, when paralysis ensued, it progressed rapidly rather than insidiously, I think it highly unlikely that edema at the operative site could have been responsible for the paraplegia.

We must now consider the possibility of postoperative hemorrhage, extrinsic and/or intrinsic to the cord. Two reasons interfere with our ready acceptance of such an interpretation: (1) the extremely rare occurrence of such a complication following cordotomy; and (2) the time lapse of one week. The effects of postoperative hemorrhage should appear within two or at the most three days after operation.

This leaves us with the consideration of thrombosis of veins or arteries of the upper thoracic cord at the site of operation. The effects of venous thrombosis characteristically supervene slowly, whereas those of arterial occlusion are apoplectic. Of these two possibilities, therefore, only the latter appears to merit serious consideration. Here again, however, the development of arterial or arteriolar thrombosis a week after an operation which was, in this case, very satisfactorily performed from the technical standpoint, must be recognized as a remote possibility, and I, for one, am willing to discount it.

We return, then, to what seems to me the most defensible conjecture—namely, that during the week following operation, further invasion of the spinal canal by the neoplasm at the site of known vertebral involvement, compromising the circulation of the cord and its roots at their lumbo-sacral levels, was the factor chiefly responsible for the paraplegia. I prefer the vascular ischemic interpretation to that of mere mechanical constriction as being more likely to produce a rapidly developing paraplegia.

SUMMARY OF NECROPSY FINDINGS

Dr. Layton: The abdominal organs were displaced ventrad by a massive retroperitoneal neoplasm. Kidneys, ureters, adrenals, pancreas and the major abdominal blood vessels were incased in this mass. A complete transverse pathologic fracture of the first lumbar vertebra had occurred

through neoplasm. Neoplastic deposits were noted in other portions of bone marrow, left parietal pleura, stomach, small intestine, liver, thyroid gland, abdominal lymph nodes and psoas muscle. This neoplasm was a malignant lymphoma of mixed lymphoblastic and reticulum cell sarcoma types.

In the region of the vertebral fracture, the spinal cord was soft and hemorrhagic, and the cordotomy wound in the region of the first thoracic segment was present.

Hydrothorax (300 ml.) was present in the left pleural cavity, and old, fibrous adhesions were noted over the bases of both lungs.

Old and recent infarcts involved the subendocardial zone of the left ventricle and the posterior wall of the left ventricle. Severe atherosclerosis partially occluded the coronary arteries.

In addition to the lymphomatous infiltrates, pyelonephritis and hydronephrosis were present in the kidneys. The urinary bladder had hemorrhagic cystitis.

The inferior half of the lower lobe of the right lung was the site of bronchopneumonia and hemorrhagic necrosis. The immediate cause of death was massive pulmonary embolism.

Incidental findings included hypospadias and cholecystolithiasis.

NECROPSY DIAGNOSES

Malignant lymphoma of mixed lymphoblastic and reticulum cell sarcoma types, originating in the retroperitoneum and having widespread dissemination

Pathologic fracture, first lumbar vertebra

Massive pulmonary embolism

Myocardial infarction with recent and healed areas

Atherosclerosis, severe, coronary arteries

Bronchopneumonia, with hemorrhagic necrosis of lower lobe of right lung

Hydronephrosis, moderate, bilateral

Hemorrhagic cystitis

Status post cordotomy

Hypospadias

Decubitus ulcers, right buttock and back.

Coming Meetings

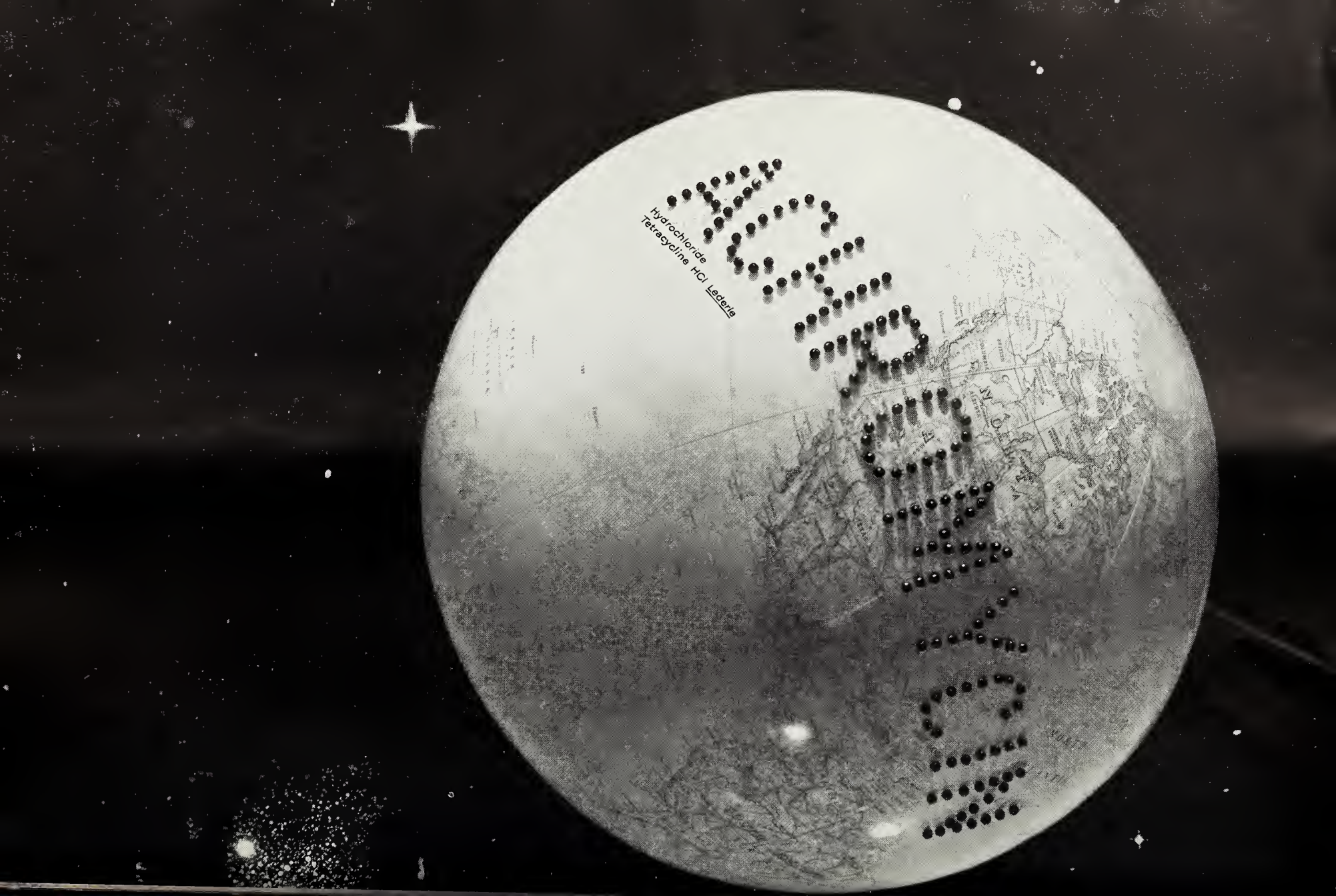
In State

Feb. 20-23	**Refresher Course for G-P's.** SUI College of Medicine, Iowa City
Feb. 26-28	**Annual Meeting, Sioux Valley Medical Association.** Hotel Sheraton-Martin, Sioux City

Out of State

Feb. 1-3	**Allergy.** Hotel Statler, Los Angeles
Feb. 1-21	**Pain Syndromes; Diagnosis & Treatment by Regional Block.** U. of Penna., Philadelphia
Feb. 1-28	**Diseases of the Chest (Columbia University).** Bellevue Hospital, NYC
Feb. 2-15	**Cystoscopy.** Cook County Graduate School of Medicine, Chicago
Feb. 3-6	**AMA Congress on Industrial Health.** Biltmore Hotel, Los Angeles
Feb. 4-5	**Hematology.** City of Hope, Duarte, California
Feb. 4-6	**Etiology, Diagnosis & Treatment of Heart Disease.** NYU, NYC
Feb. 4-7	**Sectional Meeting, American College of Surgeons.** New Orleans
Feb. 4-8	**Vaginal Approach to Pelvic Surgery.** Cook County Graduate School of Medicine, Chicago
Feb. 4-9	**Pediatric Orthopedics.** Tulane University, New Orleans.
Feb. 4-9	**Management of Mass Casualties.** Walter Reed Army Medical Center, Washington, D. C.
Feb. 4-15	**Diagnostic X-ray.** Cook County Graduate School of Medicine, Chicago
Feb. 4-15	**Serology of Syphilis.** V-D Research Laboratory, Chamblee, Georgia
Feb. 4-Mar. 1	**Basic Course in Radioisotopes.** Oak Ridge Institute of Nuclear Studies
Feb. 4-Mar. 1	**Thyroid Disease & Use of Radioactive Iodine (Harvard U.).** Massachusetts General and Beth Israel Hospitals, Boston
Feb. 5-14	**Obstetrics.** Cook County Graduate School of Medicine, Chicago
Feb. 6-7	**Varicose Veins.** Cook County Graduate School of Medicine, Chicago
Feb. 6-7	**General Practice.** Bunts Institute, Cleveland
Feb. 7	**Arthritis Symposium.** U. of Nebr. College of Medicine, Omaha
Feb. 7-9	**Diabetes.** Tufts University Medical School, Boston
Feb. 7-9	**Cardiovascular Diseases.** Albany Medical College, Albany
Feb. 7-9	**Cardiovascular Diseases for G-P's.** U. of Minnesota Center for Continuation Study, Minneapolis
Feb. 8-9	**Hematology for G-P's.** U. of Nebr. College of Medicine, Omaha
Feb. 10-12	**53rd Congress on Medical Education & Licensure.** Palmer House, Chicago
Feb. 11-13	**Anesthesiology for G-P's.** U. of Minnesota Center for Continuation Study, Minneapolis
Feb. 11-14	**Dynamics of Metabolic Diseases.** Highland Alameda County Hospital, Oakland
Feb. 11-14	**Radiology and Radioactive Isotopes.** Kansas University Medical Center, Kansas City, Kansas
Feb. 11-15	**General Surgery.** Cook County Graduate School of Medicine, Chicago
Feb. 11-16	**Laryngoscopy, Voice Rehabilitation & Audiology.** Mt. Sinai Hospital, NYC
Feb. 11-16	**Neurology for G-P's & Specialists.** U. of Minnesota Center for Continuation Study, Minneapolis
Feb. 11-22	**Surgical Technic.** Cook County Graduate School of Medicine, Chicago
Feb. 11-22	**Office & Operative Gynecology.** Cook County Graduate School of Medicine, Chicago
Feb. 12	**Chicago Heart Association.** Palmer House, Chicago
Feb. 13-14	**First Illinois Congress on Maternal Care.** Hotel St. Nicholas, Springfield
Feb. 14-16	**Orthopedic Surgery.** Tufts University Medical School, Boston
Feb. 18-22	**Clinical Bronchoscopy.** Cook County Graduate School of Medicine, Chicago
Feb. 18-22	**Pathology & Physiology of Blood Dyscrasias (American College of Physicians & Washington University).** Wohl Hospital, St. Louis
Feb. 18-Mar. 1	**Cystoscopy.** Cook County Graduate School of Medicine, Chicago
Feb. 21-22	**Poliomyelitis.** U. of California, San Francisco

(Continued on page 88)


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Coming Meetings

(Continued from page 85)

Feb 22-23 **Ninth Annual Midwinter Conference, Los Angeles Radiological Soc.** Biltmore Hotel, Los Angeles

Feb.22-Mar.21 **Laboratory Methods in Hematology.** Mt. Sinai Hospital, NYC

Feb. 24-28 **Tenth International Congress, International Congress of Surgeons.** University of Mexico, Mexico City

Feb. 25-26 **Cardiac Arrhythmias.** Kansas University Medical Center, Kansas City, Kansas

Feb. 25-27 **Auscultation of the Heart.** NYU, NYC

Feb. 25-Mar. 1 **Management of Mass Casualties.** Brooke Army Medical Center, San Antonio

Feb. 25-Mar. 1 **Endoscopy: Bronchoscopy & Laryngoscopy.** NYU, NYC

Feb. 25-Mar. 1 **Conference on Rehabilitation Centers.** Morrison Hotel, Chicago

Feb. 25-Mar. 1 **Postgraduate Course, American College of Chest Physicians.** Mark Hopkins Hotel, San Francisco

Feb. 25-Mar. 8 **General & Surgical Obstetrics.** Cook County Graduate School of Medicine, Chicago

Feb.25-Mar. 9 **Surgical Technic.** Cook County Graduate School of Medicine, Chicago

Feb. 27-28 **Otology, Rhinology, Laryngology, Maxillofacial Surgery, Bronchoscopy & Esophagoscopy.** Bunts Institute, Cleveland

Feb. 27-28 **Neurology.** Kansas University Medical Center, Kansas City, Kansas

Feb. 27-Mar. 1 **Rheumatic Diseases.** U. of Texas Medical Center, Houston

Feb. 27-Mar. 5 **Centenary of Academy of Medicine of Cincinnati.** Music Hall, Cincinnati

Feb. 27-Mar. 25 **Endaural Otologic Surgery.** Northwestern University Medical School, Chicago

Feb. 28-Mar. 1 **Cardiac Roentgenology.** NYU, NYC

Feb. 28-Mar. 2 **Rehabilitation.** Tufts University School of Medicine, Boston

Feb. 28-Mar. 2 **Sectional Meeting, American College of Surgeons.** Seattle

Mar. 1-2 **Safety Practices in the Operating Room.** New York University

Mar. 1-2 **Anesthesiology.** New York University

Mar. 1-22 **Diagnosis & Treatment of Pain Syndromes by Regional Block.** U. of Penna., Philadelphia

Mar. 1-29 **In-residence Training in Cardiovascular Diseases.** K. U. Medical Center, Kansas City, Kansas

Mar. 2 **Symposium on Cerebral Palsy.** U. of California, San Francisco

Mar. 4-5 **Varicose Veins.** Cook County Graduate School of Medicine, Chicago

Mar. 4-5 **Ophthalmology.** Ohio State University, Columbus

Mar. 4-6 **Internal Medicine for Internists.** U. of Minn. Center for Continuation Study, Minneapolis

Mar. 4-6 **Basic Electrocardiography.** Indiana University, Indianapolis

Mar. 4-6 **U. of Texas Postgrad. Cong. on Medicine & Surgery.** Scott & White Clinic Hospitals, Temple, Texas

Mar. 4-8 **Surgical Forum,** Los Angeles County Hospital. Hotel Biltmore, Los Angeles

Mar. 4-8 **U. of California Course for G-P's.** Mt. Zion Hospital, San Francisco

Mar. 4-8 **Surgery of Colon and Rectum.** Cook County Graduate School of Medicine, Chicago

Mar. 4-8 **Review of Clinical Pediatrics.** New York University

Mar. 4-8 **Vaginal Approach to Pelvic Surgery.** Cook County Graduate School of Medicine, Chicago

Mar. 4-14 **Mediclinics of Minnesota.** Ft. Lauderdale, Florida

Mar. 4-15 **Surgical Anatomy & Clinical Surgery.** Cook County Graduate School of Medicine, Chicago

Mar. 4-15 **Motor Anomalies of the Eye (for Specialists).** New York University

Mar. 4-15 **Radiologic Diagnosis of Gastrointestinal Lesions.** Mt. Sinai Hospital, New York City

Mar. 4-15 **Cystoscopy.** Cook County Graduate School of Medicine, Chicago

Mar. 4-22 **Cerebral Palsy.** Columbia-Presbyterian Medical Center, New York City

Mar. 5-8 **Annual Meeting, Chicago Medical Society.** Palmer House, Chicago

Mar. 5-8 **Maintaining Emotional Health.** Menninger Foundation, Topeka

Mar. 6 **Dentistry & Medicine.** K. U. Medical Center, Kansas City, Kansas

Mar. 6 **Office Procedures of the Generalist** (Michigan A.G.P.). Olds Hotel, Lansing

Mar. 6-7 **Obstetrics.** University of Buffalo

Mar. 7-9 **U. of Texas Cancer Symposium.** M. D. Anderson Hospital, Houston

Mar. 7-9 **Office Gynecology.** Tufts College of Medicine, Boston

Mar. 7-9 **AMA Rural Health Conference.** Louisville

Mar. 7-9 **Joint Meeting, Dist. VI, American College of Obst. & Gynec. and the State Obst. & Gynec. Societies of Iowa, Minnesota, Wisconsin and Illinois.** Hotel Schroeder, Milwaukee.

Mar. 8-9 **Sterility.** University of California at Los Angeles

Mar. 8-9 **Renal Disease.** U. of Nebraska College of Medicine, Omaha

Mar. 10-14 **Alumni Postgraduate Convention, College of Medical Evangelists.** Biltmore Hotel, Los Angeles

Mar. 11-13 **Pediatrics.** K. U. Medical Center, Kansas City, Kansas

Mar. 11-13 **Calcium & Phosphorus Metabolism.** University of Pennsylvania, Philadelphia

Mar. 11-14 **New Orleans Graduate Medical Assembly.** Municipal Auditorium, New Orleans

Mar. 11-15 **Cardiology & Electrocardiography.** U. of California, San Francisco

Mar. 11-15 **Psychiatry in Occupational Health.** U. of Cincinnati Institute of Industrial Health

Mar. 11-22 **Surgical Anatomy & Clinical Surgery.** Cook County Graduate School of Medicine, Chicago

Mar. 11-22 **Fractures & Traumatic Surgery.** Cook County Graduate School of Medicine, Chicago

Mar. 11-22 **Electrocardiography & Heart Disease.** Cook County Graduate School of Medicine, Chicago

Mar. 11-23 **Gynecology, Course II.** Cook County Graduate School of Medicine, Chicago

Mar. 13 **Fractures.** Indiana University, Indianapolis

Mar. 13-15 **Fractures.** Brooke Army Medical Center, San Antonio

Mar. 14 **Upper Gastrointestinal Bleeding.** U. of Indiana, Indianapolis

Mar. 15 **Immunization.** Academy of Medicine of Cleveland and Cuyahoga County

Mar. 15 **AMA Symposium on Fats in Human Nutrition.** New Orleans

Mar. 15-16 **Symposium on Emphysema.** Highland-Alameda County Hospital, Oakland

Mar. 17 **Regional Meeting, Am. College of Gastroenterology.** Hotel Pantlind, Grand Rapids

Mar. 17-19 **Allergy (American College of Allergists).** Palmer House, Chicago

Mar. 18-20 **Sectional Meeting, American College of Surgeons.** Washington, D. C.

Mar. 18-20 **Pediatrics for G-P's.** U. of Minn. Center for Continuation Study, Minneapolis

Mar. 18-20 **Ophthalmology.** Walter Reed Army Medical Center, Washington, D. C.

Mar. 18-20 **Physiologic Aspects of Anesthesia.** U. of Penna., Philadelphia

Mar. 18-21 **Clinical Applications of Electrocardiography.** K. U. Medical Center, Kansas City, Kansas

Mar. 18-22 **Internal Medicine (American College of Physicians).** Emory University, Atlanta

Mar. 18-22 **Clinical Bronchoscopy.** Cook County Graduate School of Medicine, Chicago

Mar. 18-22 **Electrocardiography.** New York University

Mar. 18-22 **Diseases of the Heart.** University of Michigan, Ann Arbor

Mar. 18-23 **Surgery of the Hand.** New York University

Mar. 18-23 **Medical Technology.** U. of Colorado Medical Center, Denver

Mar. 18-26 **Radiology of the Chest.** Mt. Sinai Hospital, New York City

Mar. 18-29 **Cystoscopy.** Cook County Graduate School of Medicine, Chicago

Mar. 18-29 **Gastroscopy.** Cook County Graduate School of Medicine, Chicago

Mar. 18-29 **Serology of Syphilis.** V-D Research Laboratories, Chamblee, Ga.

(Continued on page 93)



MEDICAL REQUIREMENTS FOR DRIVERS' LICENSES

The December 15 issue of the NEW YORK STATE JOURNAL OF MEDICINE contains some highly interesting proposals that have been made for making our highways safer through denying drivers' licenses to incompetents. They are contained in a series of reports by committees of specialists in various medical fields, together, in some instances, with commissioners of public safety and other highly interested laymen.

All participants were agreed that a great deal of additional research must be done before a majority of bad-risk drivers can be denied the privilege of operating motor vehicles. Psychiatric-psychologic research centers, the experts said, must be set up to develop technics that will aid in the assessment of the mental and emotional fitness of applicants. There is a need for more comprehensive data on the effects of organic disease and aging upon an individual's ability to drive a car safely. And studies should be made of the possible relationship between poor driving and the ingestion of sedatives, antihistamines, antihypertensives and tranquilizers.

But the committees made some recommendations for immediate changes in drivers' license requirements. Here are some of the more important of them.

1. Qualifying medical examinations should be mandatory prior to the first issuance of a license, and each individual should be required to take a reexamination prior to each renewal of his license.

2. Any of 14 cardiovascular conditions should disqualify an applicant for a license to drive a private automobile, and any of an even greater number should disqualify one who seeks authorization to drive commercial vehicles. The 14 include severely diminished cardiac reserve, congenital heart disease, aortic stenosis, organic valvular disease, coronary artery disease, aneurysm of any major vessel, Adams-Stokes syndrome, auriculoventricular heart block, hypertension with complications, fixed hypertension above 180/100 mm. Hg., uncontrolled paroxysmal auricular fibrillation or tachycardia, symptomatic orthostatic hypertension, carotid sinus syndrome with vertigo or syncope, and cerebrovascular disease.

3. Individuals subject to epilepsy and other conditions which bring about transient lapse of consciousness or loss of motor control should be licensed for shorter periods than other individuals, and thus required to take physical exams for drivers' licenses quite frequently. As regards all neurologic conditions, and particularly those involving disturbances of alertness and consciousness, the commissioner of public safety should have a panel of neurologists evaluate the report submitted by the applicant's physician or, if necessary, submit the applicant to a reexamination.

4. Certain orthopedic conditions should be regarded as precluding an individual's eligibility for licensing as a driver. Disabilities of the head and neck such as torticollis, cervical rib, scalenus anticus syndrome, osteoarthritis, Marie-Strümpell arthritis and cervical disk degeneration causing 50 per cent or more loss of rotation were listed as preventing the safe operation of a private automobile, and osteo- and rheumatoid arthritis were included because their pain-producing mechanisms can interfere with function.

5. In addition to the minimum visual requirement of 20/40 Snellen in the better eye, which now is more or less standard across the country, it was recommended that applicants be required to demonstrate a form field of 70° in the horizontal meridian of each eye, or of 140° in one eye.

6. If, in an individual who has been involved in an accident, alcohol is detected by chemical tests or if the driver refuses to take a test, a demerit mark should be put upon his license. Then, if he has a second accident, his license should be suspended while an investigation of his drinking habits is conducted by a clinician appointed by the authorities.

COUNTIES ARE PAYING BIG BILL

During the last three or four years, since the state of Iowa quit making specific allowances for health expenses to the recipients of "categorical" relief (Old Age Assistance, Aid to Dependent Children and Aid to the Needy Blind), and set a limit on its total monthly outlay for any one case, an increasing burden has been put upon the Poor Fund in each of the counties. Medical and hospital costs are now responsible for virtually all of such expenditures, according to Mrs. Mary Huncke, vice-chairman of the State Board of Social Welfare.

The current General Assembly is to be asked to adopt legislation enabling Iowa to qualify for matching federal funds for these purposes, and it is argued that if the state and federal governments thus take the counties "off the hook," compensation for the health care of the medically indigent can be made substantially adequate throughout the state.

In the 93 counties that cooperate by making re-

ports of Poor Fund expenditures to categorical relief recipients, the following were the totals for the fiscal year ending June 30, 1956. The reports are not compulsory, and Butler, Floyd, Polk, Sac, Scott and Webster Counties made none.

General Relief	$ 210,733.14
Medical	525,312.26
Hospital	833,305.00
	$1,569,350.40

The following is the breakdown by categories:

Old Age Assistance Recipients	$1,344,433.13
Aid to Dependent Children Cases	192,243.29
Aid to the Needy Blind Cases	32,668.98
	$1,569,350.40

The expenditures grouped under the heading "General Relief" in the first of the above tabulations are said to have included nursing care for recipients who needed such attention but couldn't pay for it out of the $99 per month state maximum.

If the Legislature decides to utilize the federal offer in its entirety, approximately $3,300,000 per year will be available for the health care of categorical-relief recipients in this state—considerably more than twice as much as the 93 reporting counties are now paying out. And it is noteworthy that payments from such funds would be made to the doctors, nurses, hospitals, pharmacists and others who provide the goods and services, rather than to the relief recipients.

It has been estimated, however, that approximately half of it will go for drugs, and that since neither the federal nor the state government will require that the medical services be rendered only by M.D.'s, a considerable share of the money is likely to go to cultists.

The three relief categories were originally set up in the Social Security Act, and the payments that the state of Iowa makes to persons eligible for those sorts of aid are made up of both federal and state money. In November, 1956, the Iowa categorical relief rolls showed the following: (N.B.: The figures in the last column are *per month,* rather than per year as in the foregoing tabulations of county expenditures.)

Category	*Number of Recipients*	*Average Monthly Grant*	*Total per Month*
Old age Assistance	39,371	$ 68.08	$2,680,468
Aid to Dependent Children	25,508 (7,067 families)	32.84 per person 118.56 per family	837,830
Aid to the Needy Blind	1,490	81.90	122,048

SHOULDER DISLOCATION

Recently the records of the Massachusetts General Hospital, in Boston, were reviewed in order that a study might be made of 500 cases of dislocation of the shoulder,* and it was discovered that the single most consistent and significant circumstance in determining the prognosis had been the age of the patient at the time of the initial injury.

Dislocations of the shoulder occur as frequently in persons over 45 years of age as in younger individuals. The recurrence rate in patients under 20 years of age, however, is almost seven times as high as in patients over 50, probably reflecting the greater activity and lesser cautiousness of youngsters.

Rather than being caused by a single pathologic condition, dislocation of the shoulder is the result of individual predisposition, traumatic factors, and forces expended at the weakest point of the shoulder. Muscle tone and tension from the enveloping rotator musculotendinous cuff group combine with the stabilizing force of the deltoid, biceps and triceps muscle groups to prevent dislocation. Mobility of the scapula and constant adjusting of the glenoid fossa to different positions of the humeral head also give some stability to the joint. Attachment of the glenoid labrum and the capsule at the rim of the glenoid helps to prevent dislocation only when tension is exerted on the capsule as the result of rotation or elevation of the shoulder. When the capsule is torn from its attachment, or the cupping of the glenoid labrum is lost because of detachment or wearing away, a force restraining the humeral head is lost. Dislocations occur anteriorly in 98 per cent of cases.

Recurrence is high when dislocation is produced by a twisting injury or forceful abduction which levers the head of the humerus out of the joint. The incidence of recurrence is notably lower when the dislocation has originally been caused by a forceful, direct blow to the anterior or posterior aspect of the shoulder.

Presumably, a dislocation that occurred easily the first time will also recur easily, for little trauma stimulates little repair. When an impacting force is responsible for the dislocation, the capsule is torn from the neck of the scapula. If scar forms or if the subscapularis muscle has been injured, a buttress of repair tissue is created where the head of the humerus commonly dislocates.

The highest recurrence rate, the investigators at Massachusetts General noted, belonged to cases in which reduction had been automatic on the first occasion, or had been easily accomplished by an inexperienced person. Recurrence was shown to have been considerably less common when moderate manipulation had been necessary the first time,

* Rowe, C. R.: Prognosis in dislocation of shoulder. J. Bone & Joint Surg., 38-A:957-977, 1956.

and was almost nonexistent when reduction had been very difficult.

The greatest recurrence rate was seen in cases that hadn't been immobilized, or when the patient had been required merely to remain strapped or carry his arm in a sling for a single week. The lowest incidence was found in patients who had been required to wear a sling for four weeks, a sling and swathe for three weeks, or strapping for three weeks. Six weeks of such treatment were found to have produced no better results than three or four.

The study revealed that the right and left shoulders are equally susceptible to dislocation, and that occurrence of dislocation apparently has little relationship to the right- or left-handedness of patients.

MEDICAL ASSISTANTS

We wish to call attention to the Iowa Association of Medical Assistants which was organized in Des Moines in 1955. The purposes of the organization are to improve the members' service to doctors and patients, and thereby to improve public relations for the medical profession. The group has no intention of "unionizing" medical assistants or undertaking collective bargaining for them.

The chapters, of which there are now 10 in the state, hold monthly meetings, and in May they join together for an annual meeting. The Iowa Association is affiliated with a national organization which held its first convention in Milwaukee in 1956. Each local group has an advisory board, the membership of which includes the executive secretary of the county medical society, if there is one, and two physicians.

At the present time, there are chapters in Des Moines, Waterloo, Fort Dodge, Sioux City, Cedar Rapids, Burlington, Ottumwa, Mason City, Clinton and Iowa City.

The JOURNAL extends its best wishes to this organization in its worthy attempt to improve the efficiency of physicians in their relations with patients and with the State Medical Society.

THE EXECUTIVE'S WAY OF LIFE

Just in case there are some practitioners of medicine in Iowa who envy occasionally the short hours and sedentary habits of business executives, we shall quote a summary that Dr. Harry Levinson of the Menninger Clinic has made of the activities with which such men concern themselves. It appeared originally in the January 1 issue of the NEW YORK STATE JOURNAL OF MEDICINE.

"As nearly everyone knows," Dr. Levinson says, "an executive has practically nothing to do, except to decide what is to be done; to tell someone to do it; to listen to reasons why it should not be done, why it should be done by someone else, or why it should be done in a different way; to follow up to see if the thing has been done; to discover that it has been done incorrectly; to point out how it should have been done; to conclude that as long as it has been done, it may as well be left where it is; to wonder if it is not time to get rid of a person who cannot do a thing right; to reflect that he probably has a wife and a large family and that certainly any successor would be just as bad, and maybe worse; to consider how much simpler and better that thing would have been done if one had done it oneself in the first place; to reflect sadly that one could have done it in 20 minutes, and as things turned out, one has to spend two days to find out why it has taken three weeks for someone else to do it wrong."

THE WALTER L. BIERRING AWARD

Members of the Iowa State Medical Society and other health workers in the state are invited to submit nominations for the Walter L. Bierring Award, which is presented annually to the individual who is judged to have made an especially outstanding contribution toward the improvement of tuberculosis control in Iowa. The award is a suitably inscribed plaque.

The following points will be considered by the judges: (1) evidence of long-range or lasting contribution toward the improvement of tuberculosis control in Iowa, and (2) a single outstanding accomplishment, as contrasted with a long-range contribution.

Nominations, together with biographical information and a comprehensive description of the nominees' accomplishments, should be sent, in triplicate, to the Award Committee, c/o Iowa Tuberculosis and Health Association, 2124 Grand Avenue, Des Moines 12, before March 1.

FALL MEDICAL MEETING IN SOUTH DAKOTA

The Hunters' Fall Medical Meeting sponsored by the South Dakota State Medical Association will be held at Mitchell, South Dakota, during the first five days of the pheasant hunting season in October, 1957.

The program is being set up for out-of-state doctors, and will feature morning scientific sessions, afternoon hunting, and evening scientific and social sessions. Registration will be limited to the available housing. The affair will not be stag.

The registration fee of $100 will cover the cost of an out-of-state hunting license, guide hire and use of reserved hunting areas, in addition to participation in the scientific and social program. For details and reservations, physicians are invited to address Mr. John C. Foster, executive secretary, South Dakota State Medical Association, 300 First National Bank Building, Sioux Falls.

President's Page

A major health project for Iowa in 1957 will be the implementation of the Mental Health Program recommended by the Governor's Advisory Committee on Mental Health.

Following a comprehensive study of mental health in Iowa by the American Psychiatric Association and the Governor's Committee, a long range program has been formulated which will modernize the care of mental patients in the state. The Mental Health Committee of the I.S.M.S. has played an important and prominent part in developing this excellent program.

The recommendations of the Governor's Advisory Committee include the enlarging of the staff, the increasing of salaries and the building of training and research facilities in the Department of Psychiatry at the SUI College of Medicine. They also call for increasing the appropriation for the State Mental Health Institutes, and removing administrative restrictions upon the hiring of personnel there. And, as a long-range objective, the Committee proposes the establishment of a State Department of Mental Hygiene, and the employment of a well-qualified psychiatrist to direct it.

The first and most urgent step to be taken is that of selling this program to the members of the I.S.M.S and to the health minded citizens of Iowa, including the legislators. The Mental Health Committee is formulating an educational program for presentation to the physicians of Iowa.

May I urge that you become acquainted with and support this important mental health program.

Wendell Downing, M.D.

President

AAGP OPPOSES MASS INOCULATIONS

Members of the Commission on Public Policy of the American Academy of General Practice, at a recent meeting in Chicago, pointed out that the physician's office is the logical immunization center. They added that mass inoculation programs, except in emergencies, tend to destroy the personal relationship that exists between the patient and his family doctor.

The policy statement followed a December 3 meeting of the National Foundation for Infantile Paralysis in New York. That meeting, attended by medical association and the public health agency representatives, was called to discuss proposed poliomyelitis immunization plans.

Dr. Floyd C. Bratt, of Rochester, New York, chairman of the AAGP Commission on Public Policy, pointed out that voluntary and public health agencies should concern themselves with public education campaigns. Actual immunization, he said, is a professional function and obligation.

Mass inoculations, Dr. Bratt went on to say, create the false impression that the art and science of medicine are adaptable to production-line technics.

An AAGP policy statement embodying these points was immediately discussed with a representative of the AMA. That spokesman declared that it was entirely consistent with a policy adopted by the AMA one day prior to the Commission's meeting.

FEBRUARY POSTGRADUATE COURSES AT KU

The University of Kansas Medical Center, in Kansas City, Kansas, is to offer three postgraduate courses during the month of February. On February 11-14, the subject will be radiology and radioactive isotopes; cardiac arrhymias will be the topic on February 25 and 26; and a wide range of problems related to diseases of the nervous system will be discussed on February 27 and 28.

All inquiries concerning program, registration, etc. should be directed to the Department of Postgraduate Medical Education, University of Kansas School of Medicine, Kansas City 12, Kansas.

RHEUMATOLOGY

The University of Texas Postgraduate School of Medicine will present a course in Rheumatic Diseases, at Houston February 27 through March 1. Drs. Joseph Bunim, Richard Freyberg and William P. Holbrook will be guest lecturers, and they will be assisted by faculty members of the University of Texas Postgraduate School of Medicine.

The tuition fee for the course is $40, and application for admission should be mailed to the Texas Medical Center, Houston 25, before February 18.

OBST. & GYNEC. MEETING

A joint meeting of District VI, American College of Obstetrics & Gynecology, and the state obstetric and gynecologic societies of Iowa, Minnesota, Wisconsin and Illinois will be held, March 7-9, at the Hotel Schroeder, in Milwaukee.

Arrangements have been made with the AAGP for postgraduate credit in Category II, and it is emphasized that all practitioners are invited and encouraged to attend. Programs and registration forms will be available in the near future. For further information, physicians can address Dr. W. B. Goddard, secretary, Iowa Obstetrical and Gynecological Society, University Hospitals, Iowa City.

Coming Meetings

(Continued from page 88)

Mar. 18-30	**Gastroscopy & Gastroenterology.** Cook County Graduate School of Medicine, Chicago
Mar. 18-Apr. 5	**Mobilization of the Stapes.** Mt. Sinai Hospital, New York City
Mar. 19-22	**Postgraduate Institute, Philadelphia Clinical Medicine Society.** Bellevue-Stratford Hotel, Philadelphia
Mar. 20	**Chicago Heart Association.** Sheraton Hotel, Chicago
Mar. 20-21	**Psychosomatic Aspects of Obstetrics & Gynecology.** Bunts Institute, Cleveland
Mar. 21-23	**Obstetrics for Specialists.** U. of Minn. Center for Continuation Study, Minneapolis
Mar. 21-23	**Pediatrics.** Tufts College of Medicine, Boston
Mar. 22-24	**Diseases of the Liver & Biliary Tract (U. of Southern California).** Hotel Statler and Los Angeles County Hospital, Los Angeles
Mar. 23	**U. of California Symposium on Newborn.** Children's Hospital, San Francisco.
Mar. 25-27	**Hematology.** K. U. Medical Center, Kansas City, Kansas
Mar. 25-27	**Refresher Course in Allergic Conditions.** New York University
Mar. 25-27	**Sectional Meeting, American College of Surgeons.** Toronto, Ontario
Mar. 25-28	**AAGP Annual Scientific Assembly.** Kiel Auditorium, St. Louis
Mar. 25-29	**Industrial Health for RN's.** University of Cincinnati
Mar. 25-29	**Measurement of Pulmonary Function in Health & Disease.** Boston City Hospital.
Mar. 25-29	**Ophthalmic Pathology.** Walter Reed Army Medical Center, Washington, D. C.
Mar. 25-29	**Pathology & Pathologic Physiology in Internal Medicine (American College of Physicians),** Cleveland Clinic, Cleveland
Mar. 25-29	**Endotracheal and Related Anesthesias.** New York University
Mar. 25-30	**Surgery of the Eye.** New York University
Mar. 25-30	**Electrocardiographic Diagnosis.** University of Michigan, Ann Arbor
Mar. 25-Apr. 5	**Surgical Technic, Course I.** Cook County Graduate School of Medicine, Chicago
Mar. 25-Apr. 5	**Obstetrics, Course I.** Cook County Graduate School of Medicine, Chicago
Mar. 25-Apr. 6	**Clinical & Anatomic Otorhinolaryngology.** U. of Indiana, Indianapolis
Mar. 26-31	**Audiology.** Northwestern University College of Medicine, Chicago
Mar. 27-28	**Postgraduate Course, Oregon Academy of Ophthalmology & Otolaryngology.** U. of Oregon Medical School, Portland
Mar. 28-30	**Metabolic & Endocrine Diseases.** U. of California, San Francisco
Mar. 28-30	**Joint Meeting, Calif. TB & Health Assn. and Calif. Trudeau Society.** Statler Hotel, Los Angeles



Blue Cross
Blue Shield



Blue Shield Acts to Meet New Challenges

Ten years ago, 45 struggling local Blue Shield Plans had a combined enrollment of less than 2,000,000 people. Today 73 Blue Shield Plans cover some 38,000,000, and if their present rate of growth is maintained, these Plans will pass the 40,000,000 mark in enrollment during 1957.

Several factors have conspired in recent years to alter and complicate the basic problems of Blue Shield enrollment. For one thing, most of the windfall apples have fallen off the tree, and enrollment men are having to climb ever higher to fill their baskets. Most local "blue chip" industrial groups have long since been enrolled by Blue Shield or some other agency, and the remaining local prospects are predominantly small groups, the self-employed and rural dwellers.

Another vital new factor has been introduced by the tremendous growth of new industrial giants resulting from corporate mergers, and the concomitant tendency of labor unions to negotiate welfare benefits on a national scale. These big corporations and unions are demanding nation-wide hospital and medical care programs which will provide at least the same scope of benefits for their workers in all parts of the country.

Blue Shield is an association of strictly autonomous local plans that have similar purposes, but offer a considerable variety of specific benefits. The Constitution of Blue Shield Medical Care Plans recognizes that "state and local medical care plans should be autonomous in their operations so that the needs, facilities, resources and practices of their respective areas can be given due consideration, but that the health and welfare of the public is advanced by the coordination . . . of methods, coverages, operations and actuarial data."

The Plans have sought, by voluntary agreement, to coordinate their efforts and to develop a basic program which each local Plan may offer to the members of inter-Plan groups within their local Plan areas.

Without sacrificing an iota of local independence, more than three-fourths of the Plans have recently reached agreement on a standard scope of Blue Shield benefits, all or any of which each Plan will make available to any group of subscribers desiring this pattern of benefits. Nearly all the other Plans have promised to "go along" in the near future.

Although this degree of cordination of benefits (in terms of covered services) has been found necessary to meet Blue Shield's enrollment challenge, each Plan will still make payments to physicians according to its locally negotiated schedules, and will calculate its own subscription rates.

This significant achievement of Blue Shield shows its ability to meet new conditions and proves the capacity of medicine's voluntary prepayment movement to solve whatever problems it may encounter.

Chicago Medical Society Meeting

One of the nation's outstanding medical science meetings, the Annual Clinical Conference of the Chicago Medical Society, is expected to draw more than 6,500 physicians and other guests March 5-8 at the Palmer House. In addition to 34 lectures, there will be daily panels and luncheon round tables, cineclinics and closed-circuit television presentations from Cook County Hospital. The Woman's Auxiliary to the CMS will maintain a hospitality room for physicians' wives throughout the meeting, and other entertainment is being planned for the ladies. Following is a list of the principal lectures and lecturers.

Tuesday, March 5

8:30 a.m. "The Prognosis of Myocardial Infarction"—Dr. Paul Dudley White

9:00 a.m. "The Treatment of Angina Pectoris"—Dr. A. Carlton Ernstene, Cleveland Clinic

9:30 a.m. "Acute and Chronic Pancreatitis"—Dr. Mandred W. Comfort, Mayo Foundation

11:00 a.m. "Current Management of Diverticulitis of the Colon"—Dr. Arthur W. Allen, Boston (surgeon)

11:30 a.m. "Obscure and Delayed Causes of Intra-abdominal Hemorrhage From Trauma"—Dr. William A. Altemeier, U. of Cincinnati

1:30 p.m. "Use and Abuses of Hormones in Gynecology"—Dr. Daniel G. Morton, U.C.L.A.

2:00 p.m. "Common Fungus Infections of the Skin"—Dr. Sture A. M. Johnson, U. of Wisconsin

2:30 p.m. "Neurologic Emergencies"—Dr. Joe R. Brown, Mayo Clinic

4:00 p.m. "Conservative Management of Backache and Sciatica"—Dr. Philip D. Wilson, Cornell University

4:30 p.m. Clinicopathologic Conference

Wednesday, March 6

8:30 a.m. "Cutaneous Manifestations of Visceral Disease"—Dr. Clinton W. Lane, Washington U., St. Louis

9:00 a.m. "Cytologic Methods in the Diagnosis of Malignancy"—Dr. Elizabeth A. McGrew, University of Illinois

9:30 a.m. "Neuropsychiatric Aspects of the Aging Patient"—Dr. Benjamin Boshes, Northwestern U.

11:00 a.m. "The Need for the Early Recognition of Glaucoma"—Dr. Willis S. Knighton, Columbia U.

11:30 a.m."An Immunization Schedule for Children"—Dr. Aims C. McGuinness, U. of Pennsylvania

1:30 p.m. "Human Hemoglobin Types and Their Significance"—Dr. Steven O. Schwartz, Northwestern U.

2:00 p.m. "The Causes and Management of Inflammation of the Bladder"—Dr. Grayson Carroll, St. Louis U.

2:30 p.m. "The Treatment of Acute Renal Shutdown"—Dr. William J. Kolff, Cleveland Clinic

4:00 p.m. "Acute Abdominal Conditions of Infancy and Childhood"—Dr. Robert Gross, Harvard

4:30 p.m. "The Late Results of Pelvic Evisceration"—Dr. Eugene M. Bricker, Washington U., St. Louis

Thursday, March 7

8:30 a.m. "Evaluation of Anesthetic Drugs"—Dr. John Adriani, Tulane

9:00 a.m. "The Use of Available Insulin Preparations in the Treatment of Diabetes Mellitus"—Dr. Priscilla White, Joslin Clinic

9:30 a.m. "Conservation of Hearing"—Dr. Lawrence R. Boies, U. of Minnesota

11:00 a.m. "Recent Advances in the Treatment of Nephrolithiasis"—Dr. Edward L. Prien, Boston University

11:30 a.m. "Accident Prevention in Children"—Dr. George M. Wheatley, Metropolitan Life Insurance Company

1:30 p.m. "The Differential Diagnosis of Dizziness"—Dr. Gordon D. Hoople, Syracuse U.

2:00 p.m. "The Diagnosis and Management of Gout"—Dr. Walter Bauer, Boston

2:30 p.m. "The Rational Use of Steroid Hormones in Arthritis"—Dr. Edward Boland, Rochester, Minnesota

4:00 p.m. Panel on Rheumatoid Arthritis

Friday, March 8

8:30 a.m. "The Risk of Delivery by Appointment"—Dr. J. Edward Hall, State U. of New York

9:00 a.m. "Common and Unusual Lesions of the Vulva"—Dr. Robert H. Barter, George Washington U.

9:30 a.m. "The Management of Ulcerative Colitis"—Dr. Julian M. Ruffin, Duke U. (medicine)

11:00 a.m. "Disorders From Unsuspected Metastases to the Central Nervous System"—Dr. Bernard J. Alpers, Jefferson Medical College

11:30 a.m. "Ocular Efficiency in the Aged"—Dr. C. Wilbur Rucker, Mayo Clinic

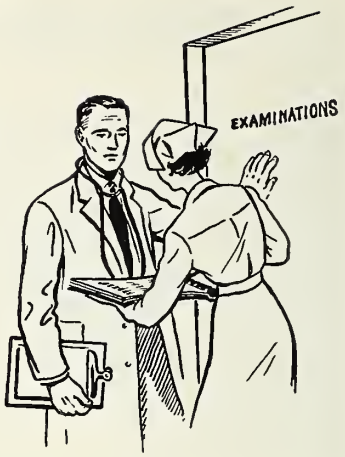
1:30 p.m. "The Use of Hydrocortisone for the Treatment of Painful and Stiff Shoulders"—Dr. Thomas B. Quigley, Boston

2:00 p.m. "Information From Angiograms"—Dr. Wendell G. Scott, Washington U., St. Louis

2:30 p.m. "The Causes of Right Upper Quadrant Pain After Cholecystectomy"—Dr. Frank Glenn, Cornell U.

3:30 p.m. Panel on Carcinoma of the Breast

THE DOCTOR'S BUSINESS



The Pitfalls in Joint Ownership of Property

HOWARD D. BAKER
WATERLOO

This is the first of a series of articles dealing in a general way with estate, insurance, investment and tax problems. In them, we shall emphasize your need for taking care in planning financial affairs outside of your medical practice.

Joint ownership of property and survivorship rights had their origin in an era much less complex than the present. Generally, they were means by which a small amount of property could be transferred to a widow with a minimum of cost and inconvenience. For the average professional man today, however, the advantage of such ownership are overshadowed by a great number of disadvantages.

The major advantage of joint ownership is that property so held passes by law to the survivor without some of the usual probate and administrative costs. Another advantage is that the survivor has almost immediate access to the property. Because of these advantages, such an arrangement may be desirable for certain classes of property. It may offer a simple solution if the estate is small and is to pass entirely to the surviving spouse. In medium-sized and large estates, however, only very limited use of joint ownership can be justified.

GIFT AND ESTATE TAXES

One of the disadvantages of joint ownership is that a gift tax problem may be involved. Generally speaking, a gift is said to have been made when a person has assigned joint ownership and survivorship rights to property that he has purchased with his own funds. But the subject is so complex that it cannot be adequately covered here, and you should consult your legal advisor before placing title in such a way. The fact that the parties had no intention of making and receiving a gift is immaterial.

Cash and United States bonds are some exceptions to this gift rule. Placing either of these in joint ownership is not said, initially, to constitute a gift. But the cash or bonds become a gift when they are converted to the donee's personal use.

Jointly-owned property with survivorship rights also presents serious estate tax problems. Broadly speaking, such property is taxed in the estate of the first spouse to die, and the tax that is levied is in proportion to the decedent's contribution to its cost. In the absence of evidence to the contrary, however, it is assumed that the first spouse to die contributed the entire cost, and the estate has the burden of proving that all or part of the cost was contributed by the surviving owner. It is also necessary for the estate to establish that no part of the cost contributed by the survivor came from funds originally owned by the decedent.

MARITAL DEDUCTION

Since all joint property with the right of survivorship passes outright to the survivor, it is often impossible for the survivor to utilize the marital deduction on the most favorable basis. For example, if all of a husband's estate is jointly owned, more property will pass to the wife than is subject to marital deduction in the husband's estate. Upon the subsequent death of the wife, in such a case, joint ownership will be responsible for an unnecessarily high and burdensome tax.

The problems of estate taxes, marital deductions and control over the ultimate disposition of property all manifest themselves where use of joint ownership with rights of survivorship has been set up without full investigation of the advantages of such ownership.

Although joint ownership with survivorship rights is fully justified under proper circumstances, its extensive use will create costly problems. One should never enter into such ownership without first seeking the advice and guidance of an attorney experienced in estate planning.

In subsequent articles, other estate-planning problems such as the marital deduction and life insurance will be dealt with. In the meantime, it might be well worth your while to seek legal advice on this matter of joint ownership as it affects your particular situation.

Iowa Academy of General Practice

AAGP ANNUAL SCIENTIFIC ASSEMBLY

All IAGP members have been notified of the Annual Scientific Assembly to be held in St. Louis, Missouri, March 25-28, 1957, but they may perhaps need to be reminded of it. The program that is to be presented represents the year's work of the Committee on Scientific Assembly, and most certainly it will be one that will stimulate the G-P.

On the first afternoon (March 25), the program is to be given over to maternal-neonatal mortality studies. The first section, maternal mortality, will be divided into three parts: (1) "Prenatal Complications," (2) "Delivery Room Catastrophes" and (3) "Postpartum Catastrophes." The second section will deal with fetal-neonatal mortality. The discussion is to deal chiefly with respiratory difficulties and will cover the recognition, treatment and complications of such entities as respiratory failure, atelectasis and hyaline membrane.

The morning of the second day will be devoted to pediatrics. Four most interesting subjects will be taken up: (1) "The Neglected Eyes and Ears of Children," (2) "Gynecologic Disorders of the Adolescent," (3) "Neglected Feet of Children" and (4) "Endocrine Problems in Children." The afternoon session will concern surgery. The first portion will be a discussion, largely from the point of view of early diagnosis, of how advances in vascular, thoracic and neurologic surgery may offer solutions for some problems. The second portion of the afternoon session will be a panel discussion of pre- and postoperative care.

The third day is to begin with a discussion of "The Infertile Couple," from both the physical and psychologic points of view. For the second portion of the morning program, the subjects are ones that are always interesting: (1) "Anorectal Disease," and (2) "Acute Adrenal Insufficiency." The afternoon session will begin with a symposium on therapy divided into three parts: (1) hypertension, (2) new drugs and (3) use and abuse of hormones. The second part of the afternoon session is to concern the cardiac patient. The topics will be "Is It Angina Pectoris?" and "Rehabilitation of the Cardiac."

The last morning will open with a paper on the topic "Is the Lab Report Accurate?" All of us, at one time or another, have been concerned about that. "Cervical Biopsies in the Office" will be the concluding topic of the first half of the morning program. The second portion will begin with a discussion of vaccination against poliomyelitis, and a paper presented by Philip Thorek on intestinal obstruction will close the scientific program. All of us will want to remain to hear it.

Doctors are being offered an incentive for registering and making hotel reservations early. Those whose letters reach the Headquarters Office, in Kansas City, before March 1 will be spared some standing-in-line at the start of the St. Louis meeting. At a special desk set up for the purpose, they will be subjected to no waiting or filling out of cards, and will need only to present one of the two badges that will have been mailed to them, receiving in exchange an official program.

All AAGP members are encouraged to attend.

SUI REFRESHER COURSE FOR G-P'S
February 20-23

On the IAGP page of the JOURNAL last month, a detailed program of the SUI Refresher Course for General Practitioners was published. It will provide a splendid opportunity for Academy members to add several hours of Category I credit to their totals, and everyone who attends will find that the lectures for which Dr. W. C. Keettel has arranged constitute a real addition to his postgraduate education.

The course will be free to Academy members, and the registration fee for non-members will be $35 for the entire course. All physicians are encouraged to plan on attending and to make reservations promptly.

Attend the Annual Meeting
of the Iowa State Medical Society
Veterans' Memorial Auditorium
Des Moines, Apr. 28-May 1, 1957

THE JOURNAL *Book Shelf*



BOOKS RECEIVED

THE PATIENT SPEAKS, by *Harold A. Abramson,* M.D. (New York, The Vantage Press, Inc., 1957. $3.50).

THE YEAR BOOK OF GENERAL SURGERY, 1956-1957 Year Book Series, ed. by *Evarts A. Graham,* M.D. (Chicago, The Year Book Publishers, Inc., 1956. $6.75).

BOOK REVIEWS

PSYCHOSOMATIC ASPECTS OF SURGERY, ed. by *Alfred J. Cantor,* M.D., and *Arthur N. Foxe,* M.D. (New York, Grune & Stratton, 1956. $6.50).

Within the covers of this book, one finds the papers presented at the first annual meeting of the Academy of Psychosomatic Medicine. They deal with the psychosomatic aspects of anesthesia, cardiovascular surgery, obstetrics and gynecology, orthopedics and some general surgical operations.

The book is interesting and appealing, and it is recommended to those doctors who are interested in more than the laboratory practice of surgery.—*H. E. Wichern,* M.D.

DISEASES OF THE BREAST, by *C. D. Haagensen,* M.D. (Philadelphia, W. B. Saunders Company, 1956. $16.00).

This long-awaited book by the outstanding authority on diseases of the breast lives up to expectations in every respect.

Not only is a complete presentation made from the standpoint of anatomy and pathology, but the diagnosis of breast conditions and the technics of surgery are covered. A chapter on the physiology of the breast is interesting, and all of the others are enlivened generously by means of graphic and pictorial accounts of the author's experiences.

This book is a must for every surgeon's library, and is also recommended for all examining physicians.—*H. E. Wichern,* M.D.

ANATOMY FOR SURGEONS: VOLUME II, THE THORAX, ABDOMEN AND PELVIS, by *W. Henry Hollinshead,* Ph.D. (New York, Paul B. Hoeber, Inc., 1956. $20.00).

The author is a professor of anatomy at the Mayo Clinic, and this volume, the second of three, presents a detailed description of the anatomy of the thorax, abdomen and pelvis. The material is easily read, for it is printed on divided pages and is accompanied by a generous number of excellent, clear drawings labeled in the English language.

It is complete, and yet it is designed expressly for the surgeon. Many references are made to reports of numerous anatomical dissections. Together with the first volume, it gives the surgeon a ready reference as well as a complete work in the field of anatomy.

It is strongly recommended for all students of medicine, whether in the classroom or in practice. The third volume is yet to be published.—*H. E. Wichern,* M.D.

BONE STRUCTURE AND METABOLISM (Ciba Foundation Symposium Series), ed. by *G. E. W. Wolstenholme,* O.B.E., M.A., M.B., B.Ch., and *Cecilia M. O'Connor,* B.Sc. (Boston, Little, Brown and Co., 1956. $8.00).

The Ciba Foundation is again to be congratulated for its efforts in enhancing medical knowledge in general This volume reports the proceedings of a symposium on bone structure and metabolism held in London in July, 1955. It contains a splendid review of the anatomy and physiology of bone, together with discussions on the biochemical and physiologic responses of bone. Discussions of the effects of radioactive material are included.

The book will prove valuable to everyone who is interested in bone development and its response to external agencies. It is hoped that further investigation of this interesting subject will be stimulated by the discussions that follow each of the papers.—*Everett M. George,* M.D.

PAPER ELECTROPHORESIS (Ciba Foundation Symposium Series), ed. by *G. E. W. Wolstenholme,* O.B.E., M.C., M.B., B.Ch., and *Elaine C. P. Millar.* (Boston, Little, Brown and Co, 1956. $6.75).

An international symposium on the latest technics and uses of paper electrophoresis was held July 27 to 29, 1955, under the sponsorship of the Ciba Foundation. The participants represented the British Empire, the United States, Germany, Sweden, Norway, France, the Netherlands and India, and all of them are recognized authorities in this field.

The book contains the 16 papers that were presented by the participants, and the discussions that have been reproduced following the papers aid in clarifying many of the practical and theoretical aspects of the subject. The book has as its purpose the presentation of the latest thinking of these authorities in this field.

The subjects covered include general methods, evaluation of plasma proteins and human hemoglobin, the effect of ACTH on protein-bound serum polysaccharides, the designing of apparatus, the analysis of separated materials, the reading of the paper-electrophoretic strip, the staining of lipoproteins, high-voltage paper electrophoresis and the future of the technic in its application to clinical research and routine analysis.

Being technical in content, the book does not make for easy reading, and although many physicians will certainly find interesting and informative sections in it, no one would regard it as a good introduction to the subject. However, for those who work with electrophoretic analysis—e.g., pathologists and clinical chemists—this book can eliminate much trial and error in organizing and operating a department of electrophoretic analysis. Many helpful charts, diagrams, photographs and examples of electrophoretic paper strips are presented.—*F. C. Coleman,* M.D.

MENTAL ILLNESS

RELATIONS OF MEDICINE AND PSYCHOLOGY

The following is a Resolution approved by the Board of Trustees of the AMA, the Council of the American Psychiatric Association and the Executive Council of the American Psychoanalytic Association.

For centuries the Western world has placed on the medical profession responsibility for the diagnosis and treatment of illness. Medical practice acts have been designed to protect the public from unqualified practitioners and to define the special responsibilities assumed by those who practice the healing art, for much harm may be done by unqualified persons, however good their intentions may be. To do justice to the patient requires the capacity to make a diagnosis and to prescribe appropriate treatment. Diagnosis often requires the ability to compare and contrast various diseases and disorders that have similar symptoms but different causes. Diagnosis is a continuing process, for the character of the illness changes with its treatment or with the passage of time, and that treatment which is appropriate may change accordingly.

Recognized medical training today involves, as a minimum, graduation from an approved medical school and internship in a hospital. Most physicians today receive additional medical training, and specialization requires still further training.

Psychiatry is the medical specialty concerned with illness that has chiefly mental symptoms. The psychiatrist is also concerned with mental causes of physical illness, for we have come to recognize that physical symptoms may have mental causes, just as mental symptoms may have physical causes. The psychiatrist, with or without consultation with other physicians, must select from the many different methods of treatment at his disposal those methods that he considers appropriate for the particular patient. His treatment may be medicinal or surgical, physical (as electroshock) or psychological. The systematic application of the methods of psychological medicine in the treatment of illness, particularly as these methods involve gaining an understanding of the emotional state of the patient and aiding him to understand himself, is called psychotherapy. This special form of medical treatment may be highly developed, but it remains simply one of the possible methods of treatment to be selected for use according to medical criteria. Psychotherapy is a form of medical treatment and does not form the basis for a separate profession.

Other professional groups such as psychologists, teachers, ministers, lawyers, social workers and vocational counselors, of course, use psychological understanding in carrying out their profession functions. Members of these professional groups are not thereby practicing medicine. The application of psychological methods to the treatment of illness is a medical function. Any physician may utilize the skills of others in his professional work, but he remains responsible, legally and morally, for the diagnosis and for the treatment of his patient.

The medical profession fully endorses the appropriate utilization of the skills of psychologists, social workers and other professional personnel in contributing roles in settings directly supervised by physicians. It further recognizes that these professions are entirely independent and autonomous when medical questions are not involved; but when members of these professions contribute to the diagnosis and treatment of illness, their professional contributions must be coordinated under medical responsibility.

MULTIPLE PATCH TEST FOR ALLERGIES

Dr. Raymond A. Osbourn, of Washington, D. C., and Dr. Thomas W. Tusing, of Vienna, Virginia, in the December, 1956, issue of the AMA ARCHIVES OF DERMATOLOGY, have described some ingenious devices by which physicians can conduct a number of simultaneous patch tests for allergies.

An elastic bandage 18 to 20 inches long is cut into strips. Gauze squares are attached to it at intervals, and test materials—creams, saturated felt pads or pieces of cloth—are applied to the gauze squares. Then the whole bandage is placed on the patient's upper arm and is held there by means of adhesive tape or self-sealing gauze.

A chart by which the doctors read the results of the test consists of a strip of old x-ray film, from which openings have been cut to fit the outline of the gauze squares of the bandage. After they have removed the bandage, they hold the film strip against the patient's arm to isolate the skin areas that show an allergic reaction and to identify the material that has been responsible for each of them.

STATE DEPARTMENT OF HEALTH



COMMISSIONER

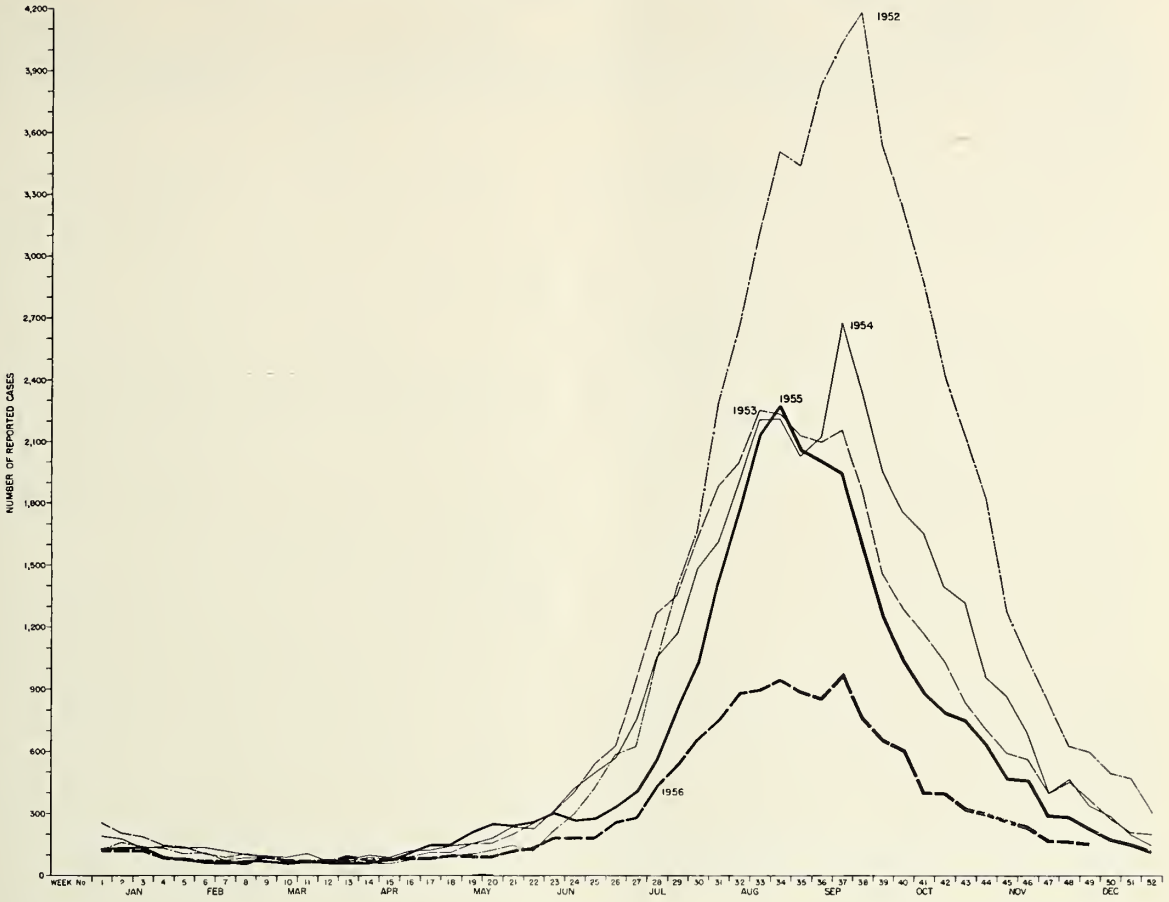
SUMMARY OF VITAL EVENTS, IOWA, 1955

	Occurrence		Residence	
	NUMBER	RATE*	NUMBER	RATE*
Estimated Civilian Population—July 1, 1955, 2,665,276				
Live Births	64,414	24.2	63,624	23.9
Illegitimate Live Births	1,235	19.2	1,208	19.0
Congenital Malformations at Time of Birth	647	10.0	624	9.8
Birth Injuries at Time of Birth	181	2.8	174	2.7
Deaths From All Causes	26,910	10.1	26,672	10.0
Fetal Deaths	779	12.1	769	12.1
Infant Deaths	1,398	21.7	1,401	22.0
Neonatal Deaths	1,082	16.8	1,076	16.9
Deaths Under 5 Years of Age	1,634	61.3	1,642	61.6
Maternal Deaths	25	3.9	23	3.6
Marriages	24,493			
Divorces	5,138			
Annulments	57			
Separate Maintenance	28			

Selected Causes of Death	*Int. List No. (6th Rev.)*				
Tuberculosis, All Forms	(001-019)	100	3.8	115	4.3
Syphilis and Its Sequelae	(020-029)	59	2.2	57	2.1
Dysentery, All Forms	(045-048)	5	0.2	4	0.2
Meningococcal Infections	(057)	15	0.6	15	0.6
Poliomyelitis	(080, 081)	15	0.6	14	0.6
All Other Infectious and Parasitic Diseases		85	3.2	85	3.2
Malignant Neoplasms	(140-205)	4,288	160.9	4,237	159.0
Diabetes Mellitus	(260)	455	17.1	448	16.8
Meningitis, Except Meningococcal and Tuberculous	(340)	19	0.7	18	0.7
Vascular Lesions Affecting Central Nervous System	(330-334)	4,008	150.4	3,954	148.4
Rheumatic Fever	(400-402)	22	0.8	19	0.7
Diseases of the Heart	(410-443)	9,925	372.4	9,856	369.8
Hypertension Without Mention of Heart	(444-447)	220	8.3	209	7.8
General Arteriosclerosis	(450)	820	30.8	819	30.7
Other Diseases of the Circulatory System	(451-468)	195	7.3	191	7.2
Nephritis and Nephrosis	(590-594)	268	10.1	267	10.0
Influenza and Pneumonia	(480-483, 490-493)	746	28.0	739	27.7
Ulcer of Stomach and Duodenum	(540, 541)	159	6.0	154	5.8
Gastritis, Duodenitis, Enteritis and Colitis, except Diarrhea of Newborn	(543, 571, 572)	102	3.8	96	3.6
Cirrhosis of Liver	(581)	164	6.2	167	6.3
Congenital Malformations	(750-759)	302	11.3	317	11.9
Birth Injuries, Asphyxia, and Infections of Newborn	(760-769)	457	17.1	454	17.0
Other Diseases Peculiar to Early Infancy	(770-776)	404	15.2	396	14.9
Symptoms, Senility and Ill-defined Conditions	(780-795)	156	5.9	161	6.0
Motor Vehicle Accidents	(810-835, 960)	628	23.6	640	24.0
All Other Accidents	(800-802, 840-959, 961, 962)	1,129	42.4	1,116	41.9
Suicide	(963, 970-979)	342	12.8	334	12.5
Homicide	(964, 980-985)	30	1.1	33	1.2
All Other Causes		1,757	65.9	1,734	65.1

* Rates for live births and deaths from all causes are calculated per 1,000 estimated population; illegitimate live births, congenital malformations at time of birth, birth injuries at time of birth, fetal deaths, infant deaths, neonatal deaths, rates per 1,000 live births; maternal deaths rates per 10,000 live births; all other rates per 100,000 estimated population, data on marriage, divorce, annulment and separate maintenance are recorded in the county where the event occurred.

POLIOMYELITIS INCIDENCE IN THE U. S., 1952-1956



MORBIDITY REPORT FOR MONTH OF DECEMBER

Disease	1956 Dec.	1956 Nov.	1955 Dec.	Most Cases Reported From These Counties
Diphtheria	1	0	12	Humboldt
Scarlet Fever	66	73	80	Des Moines, Linn, Woodbury
Typhoid Fever	0	4	3	
Smallpox	0	0	0	
Measles	243	211	106	Black Hawk, Iowa, Linn, Wright
Whooping Cough	13	51	35	Cass, Pottawattamie
Brucellosis	11	11	22	Scattered one to a county
Chickenpox	502	277	710	Black Hawk, Boone, Clay, Clinton, Linn, Pottawattamie, Scott, Story
Meningococcus Meningitis	3	0	2	Jasper, Story, Henry
Mumps	181	82	99	Des Moines, Dubuque, Linn, Scott
Poliomyelitis	5	19	12	Cerro Gordo, Floyd, Humboldt, Keokuk, Sioux
Infectious Hepatitis	19	9	35	O'Brien
Rabies in Animals	28	18	16	Cedar, Polk
Malaria	0	0	0	
Psittacosis	0	0	0	

Disease	1956 Dec.	1956 Nov.	1955 Dec.	Most Cases Reported From These Counties
Q Fever	0	0	0	
Tuberculosis	43	29	24	For the State
Syphilis	118	133	87	For the State
Gonorrhea	62	63	52	For the State
Histoplasmosis	1	1	2	Monona
Food Intoxication	0	0	0	
Meningitis (type undet.)	1	1	3	Fayette
Diphtheria Carrier	0	0	1	
Asceptic Meningitis	0	0	0	
Salmonellosis	3	4	0	Dubuque 1, Polk 2
Blastomyecosis	0	0	0	
Tetanus	0	1	0	
Chancroid	0	0	2	
Coxsackie B-5	2	0	0	Calhoun, Webster
Encephalitis	1	8	0	Polk
Influenzal Meningitis	3	1	0	Adair, Lucas, Polk
Amebiasis	0	2	3	
Clostridium Welchii	0	0	0	
Shigellosis	0	4	0	

Woman's Auxiliary News

OUR PRESIDENT SAYS—

February is the shortest month of the year, and paced by our activities it seems even shorter. While tying up the last loose ends of 1956, we find ourselves pausing occasionally to look back and dream a bit. Then suddenly we realize that it is time to look ahead toward a new spring and summer, and our busy minds fill with plans.

Even the procrastinators are finally finishing their Christmas "thank you's," and I too wish to thank all of you for the many cards and letters I received during the holidays.

LET'S PLAY FAIR IN 1957

From a sermon delivered by one of my favorite ministers, I have taken a slogan for myself at the start of this new year. I hope it will become a guide for all other Auxiliary members as well: "Let's Play Fair in 1957."

Time was when all doctors, as well as all clergymen, were revered. The wives of these men stood alongside them and basked in reflected glory. The words of doctors and ministers were law; neither they nor their wives could ever be wrong. This type of tribute they earned through long hours of dedicated service, and their wives considered it natural that they should receive it in return for the knowledge, devotion and patient service that they gave to their communities.

If some communities now seem less inclined to place doctors apart from and above other men, it is up to us, along with our husbands, to show that we still desire and indeed are determined to uphold our standards and to retain such respect as we still have. Or if our communities hold the medical profession in undiminished regard, we must show our appreciation through constant humility and service. There is an old saying that "You get just what you pay for." Doctors' wives get just what they earn. Times and styles may change, but human nature does not.

Recently, I had occasion to read a scheme for rating a new minister, and just below it was a similar rating scale for the new minister's wife. She was to be judged on five points: personality, friendliness, health, tact and interest in church affairs. Unaware though we may be that they are doing anything of the sort, our fellow citizens are judging us on such a set of points. Perhaps our husbands' top rating in the community can carry us, but let's not ride on their coattails. "Let's Play Fair in 1957."

THEY ALSO SERVE

Last fall, I visited a purely social function of a county Auxiliary, and it was explained to me that the meetings of that group are almost always mostly for fun. There were so many service organizations in that county, I was told, and so many of the Auxiliary members belonged and participated in the work of the other groups that they had no time left for Auxiliary projects.

Through the conversations in which I took part during the course of the evening, I found that I had been told was completely true. All of the members of the Auxiliary worked very hard on projects sponsored by other service clubs—projects that included all of the ones suggested by our State Auxiliary.

I was very proud of that county Auxiliary, and I asked its members to do only two things. First, I asked them not to hide their light under a bushel. I urged them to keep their organization as an Auxiliary, to pay their dues and to include the activities in which they participated as members of other groups when they made their annual report to our state chairman. Second, I asked them to read their mail, so that they could continue to be well-informed members of our State Auxiliary and could avail themselves of the ideas that are suggested to them by their state officers and committees.

All of us love our families and our homes, and it follows that we are proud of our husbands and of the profession they have chosen. So I am asking all of you to take a few minutes from your busy days to show that pride. Pay your Auxiliary dues as soon as possible, read and answer your mail promptly, and see that the wives of new doctors are included in your activities.

Work *as a doctor's wife!* Be proud, and let your fellow citizens know you are interested in their good health. Good health is your husband's business, and you are his wife.

Your Auxiliary has the tools and materials for you to work with. Please show your faith in your organization by asking for materials and by using them whenever you can.

Finally, let your officers know when you have used the suggestions that they have sent you.

JANE KING
President

IN MEMORIAM

The members of the Women's Auxiliary to the Iowa State Medical Society deeply regret the passing of Dr. James A. Downing and Dr. Simon E. Lincoln, of Des Moines.

AMERICAN MEDICAL EDUCATION FUND

Medical training is by far the most expensive sort of education today. The course is necessarily the longest; relatively high salaries are, quite properly, paid to professors of medicine and surgery; and the equipment that is essential for modern medical education and research is ever more and more elaborate and costly. The average expense that the medical school incurs is $10,000 per student per year, and of that sum, student fees meet no more than one-fifth.

In order to maintain their present teaching program, the 80 approved medical schools of the country need $10,000,000 annually. The Auxiliaries to the medical societies all over the nation have taken up the challenge, and this past year they raised over $106,000 toward making up that sum.

Let us all resolve to contribute $1.00 each to the American Medical Education Fund.

Many county Auxiliaries have been sending for "appreciation" folders and envelopes, and have been depositing gifts averaging $5.00 for the Fund. One of these appreciation folders, together with an appropriate message, is sent directly to the person in whose name the gift is made. This is a splendid means of expressing appreciation, and at the same time is a means of giving to a worthy project.

There are also "sympathy" folders available with appropriate messages to be sent to the bereaved in place of flowers.

Let's use more of these folders and help our AMEF fund.

Mrs. L. R. Hegg
State AMEF Chairman

RAISING THE DEW POINT

Some people pay their dues when due. Some pay when over due. Some never do. What do you do?

It was very gratifying last year to receive dues from most of you before March 1. That early response enabled me to meet my responsibilities to the State and National Auxiliaries on time.

Let's have a 100 per cent response before March 15 of this year. That is the deadline. Send your dues now!

Mrs. Elmer A. Vorisek
State Auxiliary Treasurer
6205 Woodland Road, Des Moines 12

COUNTY AUXILIARIES

Dallas-Guthrie

On December 27, the members of the Guthrie County Medical Society and its Auxiliary were entertained at a beautifully appointed dinner in the home of Dr. Grace Sawyer, in Woodward. Following the dinner, the guests enjoyed games of bridge and "court" whist.

In October, the Auxiliary sponsored a tea for all of the high school girls in the area who are interested in taking nurses' training. Mrs. Paul LaPorte and Mrs. Robert Meyers, of Perry, were in charge. The girls were taken on a tour of the new Dallas County Hospital, in Perry.

Mahaska

The Mahaska County Medical Auxiliary met on December 11 at the Downing Hotel, in Oskaloosa, for a luncheon. Mrs. George Atkinson presided at the business session, at which new officers were nominated.

The group has "adopted" a family for the coming year. The family will receive a Christmas basket, as well as individual gifts and cards throughout the year.

A gift subscription to TODAY'S HEALTH, each, is to be given to the County Home and to the Altrusa Adult Recreation Club.

Polk

The members of the Auxiliary to the Polk County Medical Society were hostesses at a tea held on January 25 at the Des Moines Art Center, honoring the Legislative Ladies League. Mrs. Dwight Wirtz, president, welcomed the guests.

Mrs. Elaine Bullis Orms, wife of the director of the Des Moines Community Playhouse presented a program entitled "Elaine Bullis Orms and the Lives of a Woman."

Sioux

The Auxiliary to the Sioux County Medical Society met on November 14 at the Sioux Center Community Hospital. Eight members were present.

It was decided that all money raised from the sale of TODAY'S HEALTH would be put into the Nurses' Loan Fund. Plans were begun for a Future Nurses' Tea, in the spring.

"Milestones to Marriage" was discussed, and it was decided that each town in the county would be responsible for the project if it so desired.

Mrs. L. R. Hegg gave Mrs. Dick VanEldik a

gavel which her son Piere had made for her to use when she was State Auxiliary president and which she wishes used at future meetings of the Sioux County Auxiliary.

Contributions to the Nurses' Loan Fund will be appreciated. They may be sent to the Treasurer of the Nurses' Loan Fund, Mrs. B. F. Howar, 1219 Des Moines Street, Webster City.

THE CHATTER BOX

Hello—another month gone by—we are so pleased with the items we have received from you! We're looking forward to hearing from many more of you this month so we'll have loads of news to report!!!

Congratulations are in order for the **Herb Merillats**, of Des Moines. They are the proud grandparents of twin boys! (**Dorothea** is a former president of the Polk County Medical Auxiliary.)

Mrs. S. S. Westly, of Manly, sailed from New York January 17 on the *Kungsholm* for a West Indies cruise.

The Paul Brechers and their son, of Storm Lake, attended the Rose Bowl game over the New Year's weekend.

The L. D. Norrises, of Newton, and their two young ones spent the Christmas holidays in California visiting L. D.'s mother and sister. They, too, attended the Rose Bowl game.

Speaking of the Rose Bowl game (and haven't we all, until our voices are hoarse?), wasn't it the most exciting game in years? We certainly must hand it to the boys and to their excellent coach.

We so enjoyed Bob Hope's remark to Iowa's football coach: "Before you came out here to the Rose Bowl, I figured **Forest Evashevski** was a park in Russia."

So long until next month! Let's hear from you!

DOCTORS' DAY

On Doctors' Day, the members of the medical profession, both living and dead, are honored. The idea of setting aside a day of recognition for them originated with Mrs. G. B. Almond, of Winder, Georgia, who proposed that March 30 be chosen for the observation, because it was on that day, in 1842, that her fellow Georgian, Dr. Crawford Long, initiated the technic of anesthesia, thereby making what many people believe was among the World's ten greatest advances in medicine. Since Dr. Long's contribution is a symbol of the consideration which all doctors have for their patients and of the concern that all of them have for the relief of pain, Mrs. Almond's choice was particularly appropriate.

The commemoration and day of honor dedicated to all doctors was first proposed to the Woman's Auxiliary of the AMA in 1934. It was enthusiastically adopted, and today the occasion is observed by almost every state Auxiliary in the nation.

The red carnation has been adopted as the emblem of Doctors' Day, sprays of flowers are laid on the graves of deceased physicians, and greeting cards are sent by the Auxiliaries to the physicians practicing in their areas.

SAFETY FIRST

Slow down! The life you save may be your own.

ANNUAL MEETING, 1957

Here's hoping that all of you are making plans to attend the Annual Meeting April 29-30, at the Savery Hotel, in Des Moines. You can be sure that if you miss this two-day meeting, you will be SORRY.

Never has there been a meeting with such a theme as this one is to have!

Of course, there will be business sessions—but fast-moving ones—but in addition there will be fun sessions and gala occasions. Where would there be a better place to make new friends? The Annual Meeting Committee has met with the Executive Board, and all plans are well under way.

Watch for the complete program in the March issue of the WOMAN'S AUXILIARY NEWS.

WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

President—Mrs. Dean H. King, 301 E. 4th Street, Spencer
President-Elect—Mrs. J. F. Gerken, Waterloo
Secretary—Mrs. Robert P. Mason, 5818 Chamberlain Drive, Des Moines 12
Treasurer—Mrs. E. A. Vorisek, 6205 Woodland Rd., Des Moines 12
Editor of THE NEWS—Mrs. E. T. Burke, 601 S.W. 42nd Street, Des Moines 12
Asst. Editor of THE NEWS—Mrs. D. F. Crowley, Jr., 663 44th Street, Des Moines 12

IOWA STATE MEDICAL SOCIETY

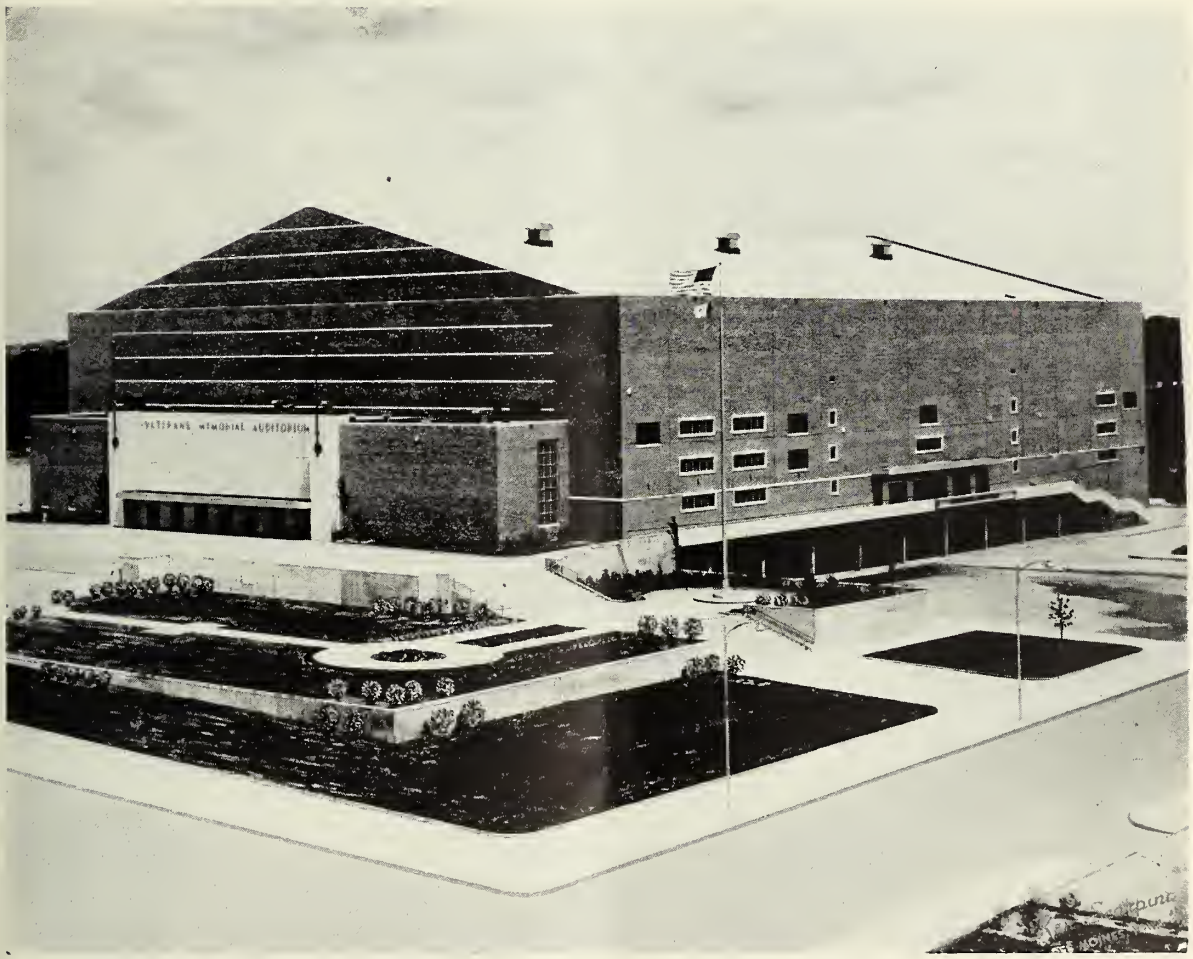
Organized in 1850

1957 ANNUAL MEETING

April 28 — May 1

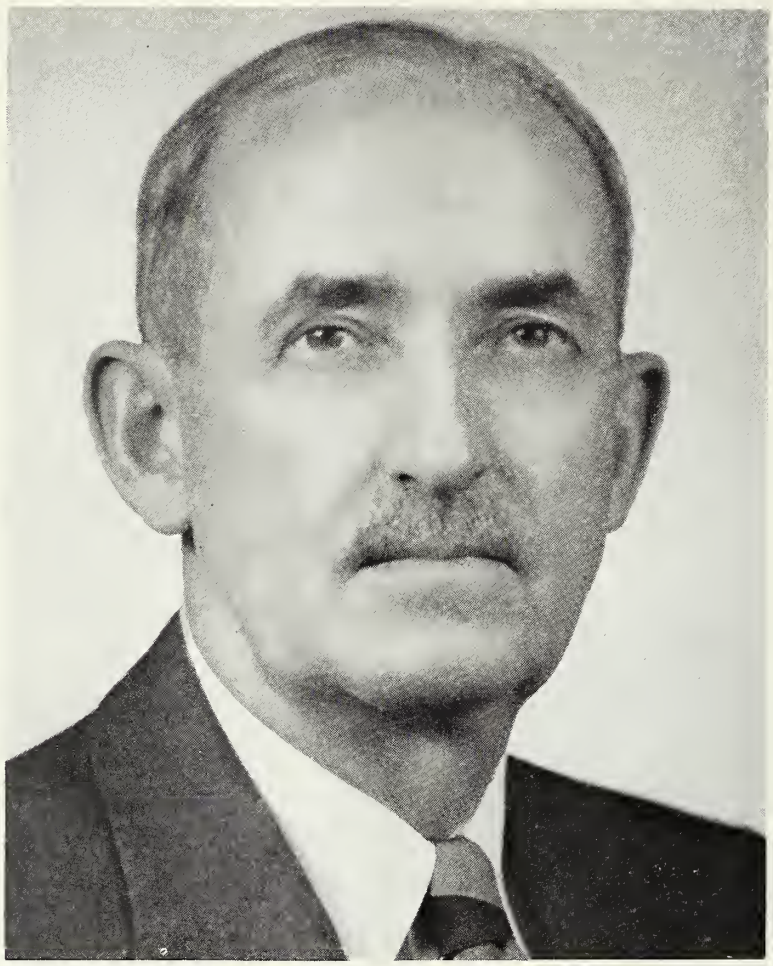
Veterans Memorial Auditorium

Des Moines



Veterans Memorial Auditorium

MEDICAL LIBRARY - UNIVERSITY OF MARYLAND



WENDELL L. DOWNING, M.D.
President
Iowa State Medical Society
1956-1957

General Sessions

South Meeting Room, Third Floor

Monday Morning, April 29

9:00 Invocation

Reverend Warner Muir, D.D.

Address of Welcome

Byron M. Merkel, M.D., Des Moines, President of the Polk County Medical Society

Response

William M. Sproul, M.D., Des Moines, Vice-President of the Iowa State Medical Society

9:15 President's Address

Wendell L. Downing, M.D., LeMars, President of the Iowa State Medical Society

9:30 The Care of the Patient With Anxiety in General Practice

Edward G. Billings, M.D., Denver, Colorado

10:00 Endocrine Problems in Children

Lawson Wilkins, M.D., Baltimore, Maryland

10:30 Recess to Visit Exhibits

11:00 Thrombocytopenia—Its Causes and Treatment

William J. Harrington, M.D., St. Louis, Missouri

11:30 General Care of Children With Congenital Defects

Wayne B. Slaughter, M.D., Chicago, Illinois

12:00 Emergency Treatment of Eye Injuries

Albert N. Lemoine, Jr., M.D., Kansas City, Kansas

Tuesday Morning, April 30

9:00 Common Injuries of the Lower Urinary Tract

Edwin C. Graf, M.D., Chicago, Illinois

9:30 National Issues Confronting Medicine

Ernest B. Howard, M.D., Chicago, Illinois

10:00 Recess to Visit Exhibits

10:30 Gynecologic Cancer—Its Early Diagnosis

William F. Mengert, M.D., Chicago, Illinois

11:00 Carcinoma In Situ of the Cervix Uteri (The Arthur Erskine Memorial Lecture)

Arthur T. Hertig, M.D., Boston, Massachusetts

11:30 Your Practice in 1966

William A. Richardson, Oradell, New Jersey

12:00 Management of Chronic Coronary Disease

Robert L. Grissom, M.D., Omaha, Nebraska

Wednesday Morning, May 1

9:00 Exhibits

9:45 Abdominal Pain—My Clinical Approach

Herbert W. Rathe, M.D., Waverly, Iowa

10:05 Surgical Aspects of Abdominal Pain

Sidney E. Ziffren, M.D., Iowa City, Iowa

10:25 Gynecologic Approach to Acute Abdominal Pain

William F. Mengert, M.D., Chicago, Illinois

10:45 Urologic Aspects of Lower Abdominal Pain

Arthur W. Woodward, M.D., Waterloo, Iowa

11:05 Psychic Pain

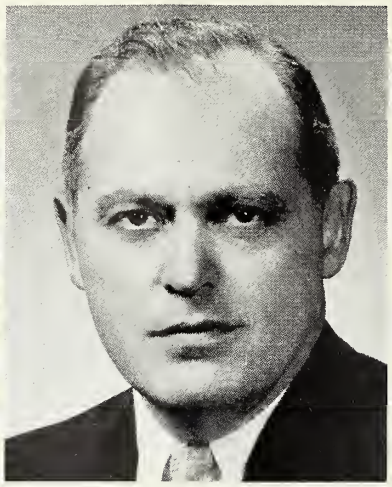
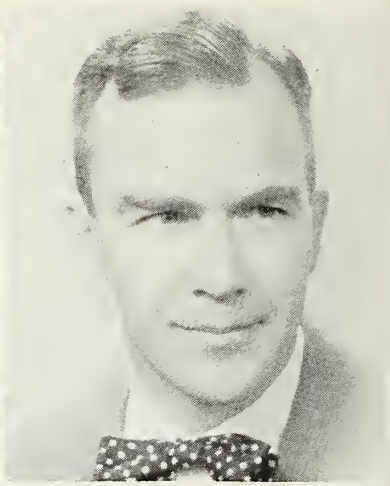
Paul M. Kersten, M.D., Fort Dodge, Iowa

11:25 Report of the House of Delegates

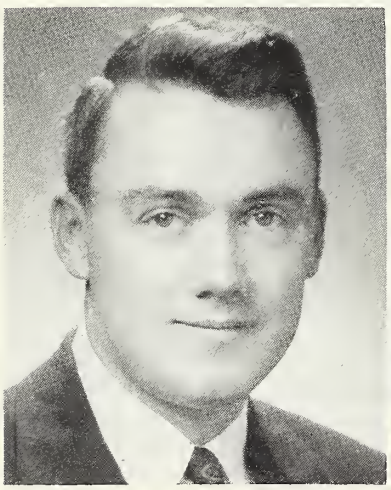
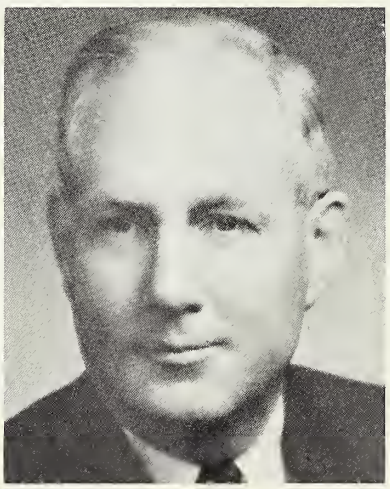
President-elect's Address

Fred Sternagel, M.D., West Des Moines, President-elect of the Iowa State Medical Society

Installation of President

Edward G. Billings, M.D. (left), is a private practitioner of psychiatry and an associate clinical professor of psychiatry at the University of Colorado School of Medicine. Edwin C. Graf, M.D., F.A.C.S. (center), is a Chicago urologist. Robert L. Grissom, M.D. (right), is chairman of the Department of Internal Medicine at the University of Nebraska College of Medicine.


William J. Harrington, M.D. (left), is an assistant professor of medicine at the Washington University medical school in St. Louis. Arthur T. Hertig, M.D. (center), is head of the Department of Pathology and Shattuck professor of pathologic anatomy at Harvard. Ernest B. Howard, M.D. (right), is assistant secretary of the American Medical Association.

Section Meetings

MEDICAL SECTION

HENRY E. HAMILTON, M.D., Iowa City
Chairman

South Meeting Room, Third Floor

Monday Afternoon, April 29

2:00 Drug- and Chemical-Induced Blood Dyscrasias
WILLIAM J. HARRINGTON, M.D., St. Louis, Missouri

2:30 Recess to Visit Exhibits

3:00 CHEST DISEASES IN FARMERS—A SYMPOSIUM
IAN M. SMITH, M.D., Iowa City, Moderator

Silo Filler's Disease and Farmer's Lung
RICHARD D. ECKHARDT, M.D., Iowa City

Psittacosis
KENNETH R. KINGSBURY, M.D., Ottumwa

Q-Fever in Animals
RICHARD A. TJALMA, D.V.M., Iowa City

Q-Fever in Man
ROBERT E. HODGES, M.D., Iowa City

The Wheezing Farmer
PAUL M. SEEBOHM, M.D., Iowa City

Tuesday Afternoon, April 30

2:00 Management of Common Arrhythmias
ROBERT L. GRISSOM, M.D., Omaha, Nebraska

2:30 Recess to Visit Exhibits

3:00 Clinical Course of Treated Diabetic Patients
ROBERT C. HARDIN, M.D., Iowa City

3:45 Indications and Contraindications for Cobalt Therapy
JAMES V. PROUTY, M.D., Cedar Rapids

SURGICAL SECTION

JOHN F. KELLY, M.D., Sioux City
Chairman

North Meeting Room, Third Floor

Monday Afternoon, April 29

2:00 Surgical Aspects of Congenital Defects
WAYNE B. SLAUGHTER, M.D., Chicago, Illinois

2:30 One Hundred Colon Cancers
JAMES F. BISHOP, M.D., Davenport, Iowa

2:50 Recess to Visit Exhibits

3:20 Treatment of Phlebitis
GEORGE I. TICE, M.D., Mason City, Iowa

3:40 Rib Fractures and Complications
DANIEL F. CROWLEY, JR., M.D., Des Moines, Iowa

4:00 Surgical Significance of Tumors of the Small Bowel
LEO H. KUKER, M.D., Carroll, Iowa

4:20 A Consideration of Dysphagia
CYRUS L. BEYE, M.D., Sioux City, Iowa

Tuesday Afternoon, April 30

2:00 A Surgeon's Stand on Thyroid Disease
SIDNEY E. ZIFFREN, M.D., Iowa City, Iowa

2:30 Hand Injuries
WILLIAM F. KRIGSTEN, M.D., Sioux City, Iowa

2:50 Recess to Visit Exhibits

3:20 Surgical Diseases of the Stomach
PAUL B. SKELLEY, M.D., Dubuque, Iowa

3:40 Diverticulitis
LEWIS L. ZAGER, M.D., Waterloo, Iowa

4:00 Acute Cholecystitis
WILLIAM R. BLISS, M.D., Ames, Iowa

4:20 The Surgical Treatment of Peripheral Vessels
FREDERICK D. STAAB, M.D., Iowa City, Iowa

ANNUAL BANQUET

Tuesday, April 30, 7:00 p.m.

Grand Ballroom, Savery Hotel
Address: "New Demands on Iowa's Physicians"
William P. Shepard, M.D., New York City
Second Vice-President, Health and Welfare
Metropolitan Life Insurance Company





Albert N. Lemoine, Jr., M.D. (left), is chairman of the Department of Ophthalmology at the University of Kansas School of Medicine. William F. Mengert, M.D. (center), is head of the Department of Obstetrics and Gynecology at the University of Illinois College of Medicine. Mr. William A. Richardson (right) is editor of MEDICAL ECONOMICS.





Wayne B. Slaughter, M.D., of Chicago (left), is clinical professor of surgery and chairman of plastic surgery at the University of Wisconsin and Loyola University medical schools. William P. Shepard, M.D. (center), is a second vice-president of the Metropolitan Life Insurance Company, and chairman of the AMA Council on Industrial Health. Lawson Wilkins, M.D. (right), is an associate professor of pediatrics at the Johns Hopkins University School of Medicine and president of the Endocrine Society.

Section Meetings (Continued)

EYE, EAR, NOSE AND THROAT SECTION

Edward E. Anderson, M.D., Davenport
Chairman

Room B, Third Floor

Monday Afternoon, April 29

2:00 Differential Diagnosis of Macular Lesions
Albert N. Lemoine, Jr., M.D., Kansas City, Kansas

2:30 Various Syndromes Associated With Visual Field Changes
Placidus J. Leinfelder, M.D., Iowa City, Iowa

2:50 Recess to Visit Exhibits

3:20 Congenital Glaucoma
Henry H. Gurau, M.D., Des Moines, Iowa

3:40 Ptosis
Arthur C. Wise, M.D., Iowa City, Iowa

Tuesday Afternoon, April 30

2:00 Early Diagnosis of Cancer of the Head and Neck
Gonzalo Obregon, M.D., Iowa City, Iowa

2:30 Sero-mucoid Otitis Media
Thomas R. Updegraff, M.D., Waterloo, Iowa

2:40 Recess to Visit Exhibits

3:10 Foreign Bodies in the Ear Canal
Byron M. Merkel, M.D., Des Moines, Iowa

3:30 The Syndrome of the Elongated Styloid
Ralph C. Carpenter, M.D., Marshalltown, Iowa

PEDIATRIC SECTION

Harold E. Farnsworth, M.D., Storm Lake
Chairman

Room C, Third Floor

Monday Afternoon, April 29

2:00 The Adrenogenital Syndrome: Diagnosis and Treatment
Lawson Wilkins, M.D., Baltimore, Maryland

2:50 Recess to Visit Exhibits

3:20 Selection of Patients for Intracardiac Surgery
John E. Gustafson, M.D., Des Moines, Iowa

4:00 Winning Paper From the Pediatrics Essay Contest

4:20 Business Meeting

OBSTETRICS AND GYNECOLOGY SECTION

Addison W. Brown, M.D., Des Moines
Chairman

Downstairs Meeting Room

Tuesday Afternoon, April 30

2:00 Complications of Pregnancy—A Panel Discussion by Members of the Maternal Mortality Reviewing Board of the Iowa State Department of Health
Howard A. Weis, M.D., Davenport
Cecil W. Seibert, M.D., Waterloo
John H. Randall, M.D., Iowa City
William C. Keettel, M.D., Iowa City
Addison W. Brown, M.D., Des Moines
Madelene Donnelly, M.D., Des Moines

3:15 Recess to Visit Exhibits

3:45 Resumption of Panel Discussion

MENTAL HEALTH SECTION

Herbert C. Merillat, M.D., Des Moines
Chairman

Downstairs Meeting Room

Monday Afternoon, April 29

2:00 What the General Practitioner Can Do for Psychiatric Cases—A Panel Discussion
Edward G. Billings, M.D., Denver, Colorado
Paul Ferguson, M.D., Lake City, Iowa
Phillip G. Couchman, M.D., Mount Pleasant, Iowa

2:50 Recess to Visit Exhibits

3:20 Critique on Tranquilizer Drugs
James D. Mahoney, M.D., Council Bluffs, Iowa

4:00 Meeting of the Iowa Neuropsychiatric Society

UROLOGY SECTION

Mark A. R. Kuhn, M.D., Waterloo
Chairman

Room D, Third Floor

Tuesday Afternoon, April 30

2:00 Introductory Remarks
Rubin H. Flocks, M.D., Iowa City, Iowa

2:15 Transrectal vs. Transurethral Prostatic Biopsy in the Diagnosis of Cancer of the Prostate
Richard V. Daut, M.D., Davenport, Iowa

2:45 Recess to Visit Exhibits

3:15 Experiences With the Ileal Conduit as a Method of Urinary Diversion
Edwin C. Graf, M.D., Chicago, Illinois

4:00 Pyelographic Clinic, Conducted by Members of the Iowa Urological Society

MEDICAL ECONOMICS SECTION

William C. Eller, M.D., Waterloo
Chairman

Room C, Third Floor

Tuesday Afternoon, April 30

2:00 Reducing Overhead in the Practice of Medicine
Robert J. Prichard, Council Bluffs, Iowa

2:30 Health Insurance Plan for Greater New York
James E. Kelsey, M.D., Des Moines, Iowa

2:40 Recess to Visit Exhibits

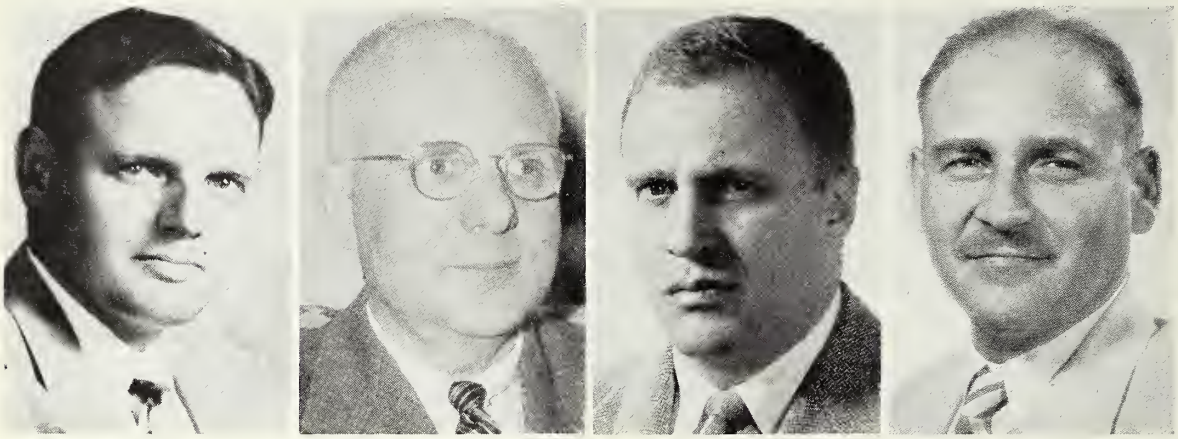
3:10 It's Not Just Your *Patient* Who Needs a Shot in the Arm
William A. Richardson, Oradell, New Jersey

3:40 The Physician, the Press and the Public
William D. Severin, Waterloo, Iowa

4:00 Gifts and Short-Term Trusts
Noel T. Robinson, Des Moines, Iowa

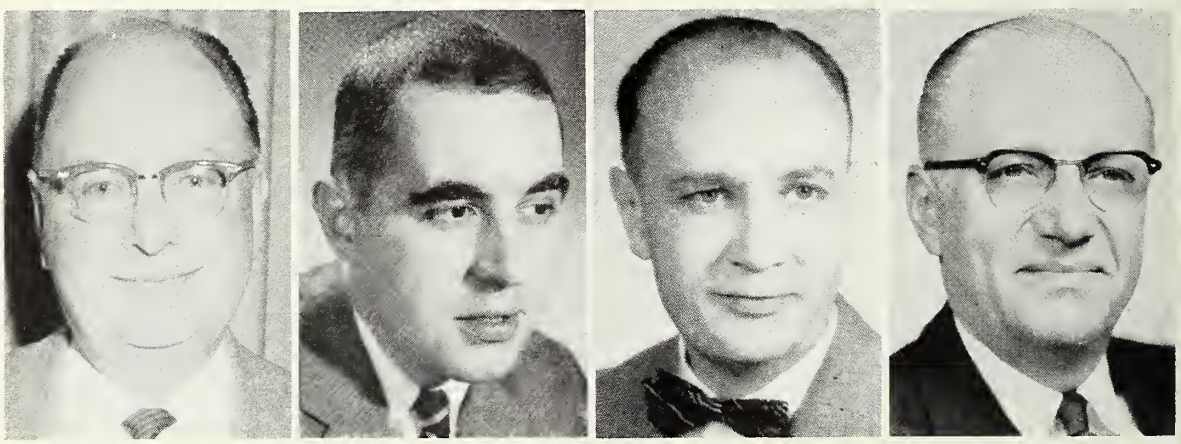
4:20 Trends of Medical Practice in Hospitals
Philip H. Cless, Des Moines, Iowa

ABDOMINAL-PAIN SYMPOSIUM



At the general session on Wednesday morning, the above four men, together with William F. Mengert, M.D., of the University of Illinois College of Medicine, will speak on the subject of abdominal pain as it is related to their respective fields of medicine. They are, from left to right, Paul M. Kersten, M.D., a Fort Dodge psychiatrist; Herbert W. Rathe, M.D., an internist at Waverly; Arthur W. Woodward, M.D., a Waterloo urologist; and Sidney E. Ziffren, M.D., a professor of surgery at the SUI College of Medicine in Iowa City.

SPECIAL SECTION ON MEDICAL ECONOMICS





A new section meeting this year will deal with the socio-economic problems of medicine, and the five men who, together with Mr. William A. Richardson, editor of MEDICAL ECONOMICS, *will compose a panel for the discussion of them are pictured herewith. In the top row, from left to right, are Mr. Philip H. Cless, Des Moines, who has served as attorney for the Iowa State Medical Society; James E. Kelsey, M.D., a Des Moines internist; Mr. Robert J. Pritchard, administrator of the Cogley Clinic, Council Bluffs; and Mr. Noel T. Robinson, vice-president and trust officer, Central National Bank and Trust Company, Des Moines. At the lower left, is Mr. William D. Severin, a reporter on politics and government for the* WATERLOO DAILY COURIER.

Special Meetings, Luncheons and Dinners

Sunday, April 28

STATE SOCIETY OF IOWA MEDICAL WOMEN and BRANCH 19, AMERICAN MEDICAL WOMEN'S ASSOCIATION

The State Society of Iowa Medical Women and Branch 19, American Medical Women's Association, will hold its annual meeting in Des Moines Sunday, April 28, at 7:30 p.m. at the home of Dr. Ada Dunner, 5120 Shriver Avenue, Des Moines. The guest speaker is to be Mr. Ray Stewart, I.S.M.S. public relations director. All women who are members of or eligible for membership in the Iowa State Medical Society are urged to make plans to attend this meeting.

—JEAN B. GLISSMAN, M.D., *Secretary*

GOLF TOURNAMENT

The annual golf tournament will be held in Des Moines Sunday, April 28, at the Wakonda Club. Physicians may play at any time during the day but the majority will start at 1:00 p.m., and everyone is urged to be on hand with a "sharp shooting" club. Dinner and the awarding of prizes will follow. Reservations should be made with Dr. Harold J. McCoy, 212 Bankers Trust Building, Des Moines, Iowa.

Monday, April 29

PAST PRESIDENTS' LUNCHEON

12:15 p.m.
Parlor B—Hotel Savery

PRECEPTORS' LUNCHEON

12:15 p.m.
Downstairs Luncheon Room
Reservations: Mr. W. R. Quinn
529 36th Street, Des Moines 12

BLUE SHIELD

Board of Directors

Breakfast—Hotel Savery—8:00 a.m.

Participating Physicians

Annual Meeting—5:00 p.m.—South Room

IOWA NEUROPSYCHIATRIC SOCIETY

Luncheon—12:15 p.m.
Iowa Room—Hotel Savery
Reservations: H. C. Merillat, M.D.
2801 Woodland Ave., Des Moines 12

IOWA ASSOCIATION OF PATHOLOGISTS

Luncheon—12:15 p.m.
Downstairs Luncheon Room
Business Meeting Following Lunch
Reservations: Wallace Rindskopf, M.D.
Broadlawns Hospital, Des Moines 14

IOWA ASSOCIATION OF PATHOLOGISTS and IOWA SOCIETY OF MEDICAL TECHNOLOGISTS

Dinner—6:30 p.m.
Library—Des Moines Club
Address: "Trophoblast"
Arthur T. Hertig, M.D., Boston, Massachusetts
Head, Dept. of Pathology, Harvard Medical School
Reservations: Wallace Rindskopf, M.D.
Broadlawns Hospital, Des Moines 14

IOWA RADIOLOGICAL SOCIETY

Business Meeting—1:30 p.m.—Room A

IOWA SOCIETY OF ANESTHESIOLOGISTS

West Room—Des Moines Club
Social Hour—6:00 p.m.
Dinner—7:00 p.m.
(Guest Speaker to Be Announced)
Reservations: Thomas A. Bond, M.D.
707A Equitable Bldg., Des Moines 9

IOWA ORTHOPEDIC SOCIETY

Dinner—6:30 p.m.
Colonial Room—Des Moines Club
Reservations: William A. Baird, M.D.
313 Fifth Street, Ames

IOWA PEDIATRIC SOCIETY

Hermitage Room—Des Moines Club
Social Hour—6:30 p.m.
Dinner—7:30 p.m.
Reservations: Ralph E. Dyson, M.D.
3200 University, Des Moines 11

IOWA ACADEMY OF SURGERY

Dinner—6:30 p.m.
South Room—Des Moines Club
Reservations: R. B. Stickler, M.D.
620 Equitable Building, Des Moines 9

CHARITY DANCE

Grand Ballroom—Hotel Savery—9:00 p.m.
Don Hoy and His Orchestra
Sponsored by the Woman's Auxiliary for the Benefit of Its Nurses' Loan Fund
Reservations: Mrs. R. E. Hines
3525 Witmer Parkway, Des Moines 10

Tuesday, April 30

LEGISLATIVE CONTACT MEN

Breakfast—7:30 a.m.
Des Moines Room—Hotel Savery

BLUE SHIELD

Board of Directors' Breakfast
Hotel Savery—8:00 a.m.

IOWA OBSTETRICAL AND GYNECOLOGICAL SOCIETY

Luncheon—12:15 p.m.
Grand Ballroom—Hotel Savery
Reservations: W. B. Goddard. M.D.
University Hospitals, Iowa City

(Continued on page 115)

The House of Delegates

Open to all members

First Meeting—Sunday
April 28, 1:00 p.m.

South Room, Veterans Memorial Auditorium

Roll Call

Approval of the Minutes of the Meeting Held on April 22, 1956

Reports of Officers

Reports of Committee Chairmen

Memorials and Communications

New Business

Election of Committee on Nominations

SPEAKER



Herman J. Smith, M.D.

Second Meeting—Wednesday
May 1, 7:30 a.m.

North Room, Veterans Memorial Auditorium

Roll Call

Reading of Minutes

Report of Committee on Nominations

Election of Officers

Reports of Committees

Unfinished Business

New Business

Announcement of Committees

Adjournment

CHAIRMEN OF SECTION MEETINGS



From left to right, top row: Edward E. Anderson, M.D., Davenport, Eye, Ear, Nose and Throat Section; Addison W. Brown, M.D., Des Moines, Obstetrics and Gynecology Section; William C. Eller, M.D., Waterloo, Medical Economics Section; Harold E. Farnsworth, M.D., Storm Lake, Pediatrics Section; Bottom row: Henry E. Hamilton, M.D., Iowa City, Medical Section; John F. Kelly, M.D., Sioux City, Surgical Section; Mark A. R. Kuhn, M.D., Waterloo, Urology Section; Herbert C. Merillat, M.D., Des Moines, Mental Health Section.

IOWA ACADEMY OF GENERAL PRACTICE

Luncheon—12:15 p.m.
Iowa Room—Hotel Savery
Reservations: Mrs. Isabelle Wandling
911 Bankers Trust Bldg., Des Moines 9

IOWA UROLOGICAL SOCIETY

Luncheon—12:15 p.m.
Iowa Room—Des Moines Club
Reservations: R. J. McNamara, M.D.
607 Roshek Building, Dubuque

ANNUAL BANQUET

Grand Ballroom—Hotel Savery—7:00 p.m.
Address: "New Demands on Iowa's Physicians"
William P. Shepard, M.D., New York, N. Y.
Second Vice President, Health & Welfare
Metropolitan Life Insurance Company

Scientific Exhibits

State University of Iowa College of Medicine

Pulmonic Stenosis—G. N. Bedell, M.D., J. L. Ehrenhaft, M.D., J. W. Culbertson, M.D., L. E. January, M.D., E. O. Theilen, M.D., and J. W. Eckstein, M.D., Department of Internal Medicine

Teaching Models Made With a Self-Curing Acrylic—J. H. Randall, M.D., and W. C. Keettel, M.D., Department of Obstetrics and Gynecology

Central Retinitis Associated With Amebiasis—A. E. Braley, M.D., and H. E. Hamilton, M.D., Departments of Ophthalmology and Internal Medicine

Classification of Hand Injuries—Adrian Flatt, M.D., Department of Orthopedics

Maxillofacial Rehabilitation—D. M. Lierle, M.D., W. C. Huffman, M.D., W. H. Olin, D.D.S., and D. C. Spriesterbach, Ph.D., Department of Otolaryngology and Maxillofacial Surgery

Treatment of Sprained Ankle—W. D. Paul, M.D., and David Paul, M.D., Department of Physical Medicine and Rehabilitation

Research and Training—P. E. Huston, M.D., Max Pepernik, M.D., D. Jean Arnold, M.D., and John Knott, M.D., Psychopathic Hospital

Premature Closure of Cranial Sutures (Craniostenosis)—G. E. Perret, M.D., and D. Schultz, M.D., Department of Surgery

Medicine Administration—Miss Alice White, College of Medicine

Veterans Administration Hospital, Iowa City

Metastatic Carcinoid Tumor—D. C. Funk, M.D., and W. B. Bean, M.D., Medical Services, Veterans Administration and State University of Iowa Hospitals

Silo Fillers Disease (Silage Gas Poisoning)—R. D. Eckhardt, Medical Service

Are You Exposing Yourself to Excessive Irradiation?—A Primer on Radiation Hazards—R. E. Peterson, M.D., Radioisotope and Medical Service

Paper Electrophoresis—H. P. Chen, M.D., and R. S. Melville, Department of Pathology

Carcinoma of the Lung—J. G. Baron, M.D., and S. H. Walker, M.D., Radiology and Surgical Services

Esophageal Diverticulum (Movie: 15 min., silent, color)—E. S. Brintnall, M.D., E. L. Grandon, M.D., D. M. Lierle, M.D., and R. T. Tidrick, M.D., Departments of Surgery and Otolaryngology, Veterans Administration and State University of Iowa Hospitals

Woman's Auxiliary Program on pages 169-170 of this issue.

Veterans Administration Hospital, Des Moines

Carcinoma of the Lung With Emphasis on Grid Therapy—P. J. Trier, M.D., Radiology Service

Clean Surgical Wounds—Non-dressing and Non-suture—L. T. Palumbo, M.D., A. N. Smith, M.D., and D. J. Lulu, M.D., Surgical Service

Inferior Vena Cava Ligation and Lumbar Sympathectomy—L. T. Palumbo, M.D., and Raymond Vespa, M.D., Surgical Service

General

Poison Information Center of Iowa—Raymond Blank Memorial Hospital for Children and Iowa State Department of Health

The Microhematocrit—Its Uses and Advantages—Iowa Society of Medical Technologists

Exfoliative Cytology—Iowa Association of Pathologists and Nebraska Association of Pathologists

Exhibit—Iowa Academy of General Practice

The Physician's Role as a Medical Officer in the Iowa National Guard—J. R. Hyde, M.D., Emmetsburg

Professional Relations—Iowa Pharmaceutical Association

Exhibit—Iowa Veterinary Medical Association

What the Iowa Heart Association Does for the Practicing Physician—Iowa Heart Association

Misdiagnoses in Tuberculosis—Iowa Tuberculosis and Health Association and Iowa Trudeau Society

Exhibit—Iowa State Department of Health

The Disabled Can Work—Division of Vocational Rehabilitation, Department of Public Instruction

Devices and Services for the Blind—Iowa Commission for the Blind

Speech and Hearing Rehabilitation—Des Moines Hearing and Speech Center

Easter Seal Program—Polk County Society for Crippled Children and Adults

Exfoliative Cytology in the Diagnosis of Early Cancer—American Cancer Society, Iowa Division, Inc.

Immunize Against Poliomyelitis—National Foundation for Infantile Paralysis, Thomas M. Rivers, M.D.

Auditorium Luncheon Service

A luncheon area will be set up at the rear of the Arena Floor again this year for the convenience of physicians and exhibitors desiring to lunch in the building. Arrangements have also been made for special group luncheons to be served in a Downstairs Luncheon Room as they were last year.

Technical Exhibitors

Abbott Laboratories, North Chicago, Illinois
A. S. Aloe Company, St. Louis, Missouri
Ames Company, Inc., Elkhart, Indiana
The Baker Laboratories, Inc., Cleveland, Ohio
Benson Optical Company, Minneapolis, Minnesota
Blue Cross-Blue Shield Plans, Des Moines-Sioux City
S. H. Camp & Company, Jackson, Michigan
The Central Pharmacal Company, Seymour, Indiana
CIBA Pharmaceutical Products, Summit, New Jersey
The Coca-Cola Company, Atlanta, Georgia
Cole Chemical Company, St. Louis, Missouri
Comfa-Lounge Massage Chair Company, Des Moines, Iowa
Desitin Chemical Company, Providence, Rhode Island
Dictaphone Corporation, Des Moines, Iowa
Doho Chemical Corporation, New York, New York
Eisele & Company, Nashville, Tennessee
Endo Laboratories, Inc., Chicago, Illinois
C. B. Fleet Company, Inc., Lynchburg, Virginia
Flint, Eaton & Company, Decatur, Illinois
Foot-so-Port Shoe Company, Oconomowoc, Wisconsin
The New Gaynor-Bagstad Company, Sioux City, Iowa
Geigy Pharmaceuticals, Yonkers, New York
General Electric Company, X-Ray Department, Des Moines, Iowa
High Fidelity Sales, Inc., Des Moines, Iowa
Hockenberg Hospital Supply Company, Des Moines, Iowa
Hoffmann-La Roche, Nutley, New Jersey
Holland-Rantos Company, Inc., New York, New York
Holmes, Prouty, Murphy & May, Des Moines, Iowa
Koch Brothers, Des Moines, Iowa
Lederle Laboratories Division, American Cyanamid Company, Pearl River, New York
Eli Lilly and Company, Indianapolis, Indiana
J. B. Lippincott Company, Philadelphia, Pennsylvania
Mead Johnson & Company, Evansville, Indiana
Medco Products Company, Tulsa, Oklahoma
The Medical Protective Company, Fort Wayne, Indiana
Merrill Lynch, Pierce, Fenner & Beane, Des Moines, Iowa
Milex Products, Peoria, Illinois
V. Mueller & Company, Chicago, Illinois
National Dairy Council, Chicago, Illinois
The National Drug Company, Philadelphia, Pennsylvania
Organon, Inc., Orange, New Jersey
Parke, Davis & Company, Detroit, Michigan
Pet Milk Company, St. Louis, Missouri
Pfizer Laboratories, Brooklyn, New York
Physicians and Hospitals Supply Company, Inc., Minneapolis, Minnesota
Picker X-Ray, Midwest, Inc., Sioux City, Iowa
Professional Management Midwest, Waterloo, Iowa
Riker Laboratories, Inc., Los Angeles, California
A. H. Robins Company, Inc., Richmond, Virginia
J. B. Roerig and Company, Chicago, Illinois
Ross Laboratories, Columbus, Ohio
Sanborn Company, Waltham, Massachusetts
Sandoz Pharmaceuticals, Hanover, New Jersey
W. B. Saunders Company, Philadelphia, Pennsylvania
Schering Corporation, Bloomfield, New Jersey
Julius Schmid, Inc., New York, New York
G. D. Searle & Company, Chicago, Illinois
Sears Roebuck and Company, Des Moines, Iowa
Security Laboratories, Burlington, Iowa
Smith, Kline & French Laboratories, Philadelphia, Pennsylvania
E. R. Squibb & Sons, New York, New York
Standard Chemical Company, Des Moines, Iowa
The Stuart Company, Chicago, Illinois
Sutliff & Case Company, Inc., Peoria, Illinois
The Upjohn Company, Kalamazoo, Michigan
Whylie-Farrell, Inc., Des Moines, Iowa
Williams Surgical Supply Company, Iowa City, Iowa
Winthrop Laboratories, New York, New York

SPRING DANCE

Monday, April 29, 9:00-12:00

Grand Ballroom, Hotel Savery
Benefit—Woman's Auxiliary Nurses' Loan Fund
Don Hoy's Orchestra

Scientific Articles

Clinical Evaluation and Repair of

Peripheral Nerve Injuries

GEORGE PERRET, M.D.

IOWA CITY

THE EARLY RECOGNITION of a peripheral nerve injury is the greatest single step toward assuring its proper treatment. Conversely, failure to recognize a peripheral nerve injury is the commonest cause for delay in treatment and the ensuing poor functional results. A man's ability to work and—less directly—his happiness depend to a large extent upon the proper function of his hands and feet, and that function, in turn, depends upon his having intact median, radial, ulnar, sciatic, tibial and peroneal nerves.

Numerous factors are responsible for physicians' failure to recognize an injured peripheral nerve at the time they make their initial examinations of patients and repair their lacerated extremities. In the excitement connected with a fresh laceration, the physician fails to ascertain the functional integrity of the limb. He forgets to test motor function and sensation, and he pays attention only to the area of actual laceration. Occasionally, the patient is comatose or disoriented, and may not be responsive enough to cooperate with the examiner. Also, it may become difficult to differentiate clinically between a nerve injury and a general dysfunction resulting from pain, swelling and bleeding, and to differentiate a nerve injury from a tendon or a bone injury, unless one examines muscle contractions and sensations accurately.

The discovery of a fracture in x-ray films may cause the doctor to overlook a peripheral nerve injury. During the course of immediate debridement and repair of a laceration, the wound is not searched for an unexpected lacerated nerve. An injured nerve rarely bleeds, and if severed, its ends have a tendency to retract and become hidden in contused or swollen tissues. Occasionally, the operator is unable to find an injured nerve in a wound even though the injury was clinically diagnosed before the operation. Hemorrhage, swelling, necrosis, retraction of the severed nerve or displacement of the nerve by the injuring force complicate his search. Furthermore, some surgeons have difficulty in identifying nerves and tendons, and in consequence mistake one for the other and suture a nerve to a tendon. This is not a rare occurrence in wrist lacerations, where tendons, nerves and arteries have been inadequately identified before repair is undertaken. Inadvertently, during the course of an operative procedure, a nerve may be injured, and this injury may not be recognized, or if recognized, the physician may postpone suturing it in the false hope that spontaneous recovery will take place.

Factors other than the immediate wound may cause injury to nerves. These include ischemia following severance of a blood vessel, and pressure on a nerve by a fractured bone, by an incorrectly applied plaster cast, by a too tightly bound bandage or by faulty positioning of an extremity on the operating table, or severance incident to an apparently insignificant laceration of skin and subcutaneous tissue by instruments used in the removal of a plaster cast.

NERVE DAMAGE MUST BE SEARCHED FOR

If a peripheral nerve injury has not been diagnosed preoperatively or during the course of the operation, early detection during the postoperative period is essential. Unfortunately, many physicians procrastinate about symptoms of peripheral nerve lesions in the hope that they are just temporary, or that they are the normal consequence of the swelling produced by injury and by operative repair.

Either preoperatively or postoperatively, and indeed as soon as they are able, most patients will

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complain of weakness in the extremity, and especially of numbness. In many instances, without having benefited from a neurologic examination of the involved extremity, the patient is led to believe that all of his symptoms will disappear spontaneously, and that the weakness and numbness will improve. Some physicians are led to believe that complaints of weakness or numbness are functional, either because they have failed to recognize a peripheral injury clinically, or because they have seen no injured nerve in the wound when they repaired the laceration. Eventually, patients with peripheral nerve injuries develop trick movements to overcome weaknesses produced by paralyzed muscles, and they also experience a partial return of sensation in an area which they previously had described as numb. Through the trick movements, the patient is merely finding a way of compensating for his difficulty, and sensation returns only in areas of sensory overlap. These developments only simulate spontaneous nerve regeneration, and are not signs of recovery.

Late but progessive development of symptoms of peripheral nerve lesions is not uncommon following injuries. These may be caused by the formation of scar tissue, by the development of a hematoma, by bony changes such as traumatic osteoarthritis, or by the formation of callus which may either compress, constrict or completely surround a nerve. This late development of peripheral-nerve symptoms must not be overlooked, for it demands immediate attention.

NERVE INJURIES MUST BE TREATED FIRST

When should a peripheral-nerve lesion be investigated? In cases of fresh, open injuries such as lacerations, stab wounds, gunshot wounds or compound fractures, the answer is "Immediately, and as soon as recognized, if the lesion was not diagnosed at the time of injury."

In the presence of an open wound, it would be a great mistake to delay treatment in the hope of spontaneous recovery of nerve function. Nerve ends should be sutured and apposed as quickly as possible after the nerve has been divided. I am sure that there is no physician who would not want his median nerve sutured promptly if he should happen to sever it by putting his hand through a window. But too often, attention is given to a fracture or to a joint, and the nerves are unattended until too late. Because arm nerves and the brachial plexus control the most important part of the upper extremity, the hand, the repair of nerves should have priority. They should be repaired at the time the fracture is set, or before. If necessary, the arm should be bent at the fracture to get the nerve ends together. The bones and the joints that are of lesser importance can be treated later. All delays in repairing a nerve will be complicated by increased muscle atrophy, by fibrosis of muscles, tendons and joint capsules, by contractures of tendons and joints, by ankylosis and bone atrophy, and by trophic skin changes, ulceration and infection.

Lesions of the peripheral nerve may produce (1) motor disturbances, weakness or flaccid paralysis, and muscle atrophy; (2) sensory disturbances, paresthesia, hypesthesia or anesthesia; and (3) combined motor and sensory disturbances. In the upper extremities, the ulnar, radial and median nerves are most commonly injured. Brachial-plexus injuries are by no means rare. In the lower extremities, the commonest injuries are ones affecting the peroneal, the sciatic and the tibial nerves.

Not infrequently, both ulnar and median or ulnar and radial nerves may be injured. The combination of nerves injured in a brachial-plexus lesion is multiple. Determination of the paralyzed muscles and of sensory loss will accurately localize the lesion among the cords, trunks and roots making up the brachial plexus.

TESTS FOR PERIPHERAL NERVE LESIONS

There are a few simple tests by means of which peripheral nerve lesions can easily be recognized:

1. *Ulnar nerve*—inability to point the tips of all fingers and thumb into a cone (involving especially the fourth and fifth fingers), inability to abduct and adduct the fingers with the hand flat on the table in the same plane as the forearm, and numbness involving the last phalanx of the fifth finger
2. *Radial nerve*—wrist drop when the forearm is supported, inability to extend the fingers fully when the hand is held in dorsiflexion, inability to extend or abduct the thumb, and inconstant numbness between the metacarpals of the thumb and the index finger
3. *Median nerve*—inability to appose the tip of the thumb and the tip of the index finger, inability to make a complete fist, with weakness in the second and third fingers, and numbness over the palmar surface of the last two phalanges of the index.
4. *Axillary nerve*—inability to abduct the hanging arm away from the body and numbness over the deltoid region
5. *Musculo-cutaneous nerve*—inability to contract the biceps muscle or flex the forearm when the elbow is supported
6. *Peroneal nerve*—inability to dorsiflex the foot and toes when the leg is hanging from the table, inability to stand on the heel, and numbness of the anterolateral aspect of the lower leg or the space between the first and second metatarsal over the dorsal surface of the foot
7. *Tibial nerve*—inability to plantar flex the foot and toes when lying down, inability to stand on tiptoes and numbness over the external aspect of the sole of the foot
8. *Sciatic nerve*—inability to move the foot or toes when lying down, and numbness over the back and the sole of the foot.

It must be obvious that the higher or the more central the lesion, the more peripheral muscles

must be involved. An ulnar-nerve lesion is characterized by atrophy of the interosseous muscles, particularly between the space of the first metacarpal of the index finger and that of the thumb, with atrophy of the muscles of the hypothenar eminence. The paralysis and atrophy of the thenar muscles that place the thumb on the same plane with the palm of the hand is characteristic of a median-nerve lesion. Atrophy of the gastrocnemius muscle group indicates a lesion of the tibial nerve, and atrophy of the anterior tibial group of muscles indicates a lesion of the common peroneal nerve.

PHYSICAL THERAPY IS HIGHLY IMPORTANT

Nerves regenerate anytime and anywhere, when the two ends are in apposition. Experimentally, as a matter of fact, it is rather difficult to keep a nerve from regenerating, Following nerve injury, the important thing is to keep the effector mechanism in a state of function. Usually not enough attention is paid to keeping the muscles and joints in condition for function by means of physical therapy and electrotherapy, so that when the nerve does regenerate, the effector mechanism can work.

It is of little avail to have perfect microscopic regeneration of a peripheral nerve trunk if the muscles are so atrophied and fibrosed, and if the joints are so fibrosed and ankylosed that they will not move. Such a peripheral-nerve suture may be classified as a failure, even though regeneration within the nerve trunk is perfect. Thus it is impossible to overemphasize the importance of electrical stimulation, massage, active and passive movements, whirlpool, and the proper splinting of the paralyzed extremity or portion of the extremity in a position of relaxation of the paralyzed muscles and of function of the limb.

Preoperative and, especially, postoperative physiotherapy should be carried out in every patient with a peripheral nerve lesion. Following nerve repair and at night, early splinting is most useful. All that is necessary is some slight, springy or elastic splint that will exactly counterbalance the muscle imbalance and keep the hand in a position of function. The patient should also be urged to engage in occupational therapy and use the affected hand or foot, or exercise the affected hand with the other, normal, hand. Physiotherapy should be continued until there is evidence of sensory recovery and of contraction of the previously paralyzed muscle.

NERVE REPAIR IN AN OPEN WOUND

The ideal method of nerve repair is immediate, accurate apposition of the two freshly-severed nerve ends, without rotation of the nerve trunks, so that the proper nerve fascicles are brought together. It usually becomes necessary for one to debride the two severed nerve ends for a distance of two or three millimeters each, in order to remove hemorrhagic and necrotic tissue. This should be done with a fine razor blade. After careful identification of the position of the nerve fascicles, one should appose the two nerve ends accurately by means of fine epineural sutures. No suture material should be passed through the bulk of the nerve trunk itself, for it would only create scar tissue and result in a neurofibroma. If necessary, the nerve trunks can be freed from the surrounding tissue above and below the site of repair so as to relax the nerve and prevent tension at the site of the suture.

Contaminated wounds should first be thoroughly debrided, and the nerve ends should also be debrided. In a potentially infected wound, it is better to unite the divided nerve ends than to leave them disunited and allow neuromas to form and retraction to occur, provided that careful debridement and mechanical cleansing of the wound are done, and antibiotics are used. From experimental investigation, it has been learned that the local use of sulfonamides and antibiotics does not interfere with the regeneration of a peripheral nerve. If a wound is grossly infected, one or two wire sutures should be used as soon as possible to unite the severed nerve ends. Then, when infection has subsided and the wound has healed, the wound should be reopened and the nerve carefully sutured again. The degree of regeneration is in direct proportion to the accuracy of the union, and the union cannot be perfect if the ends have been apposed no more than crudely, or in the presence of gross infection.

A lesion of the radial nerve and an associated compound comminuted fracture of the humerus should be treated simultaneously. A large gap in the continuity of a peripheral nerve which may be associated with great loss of muscle bulk and skin, such as is encountered in burns or explosion injuries, may preclude an end-to-end suture of the nerve. In such a case, exploration of the nerve will show that extensive neurolysis and rerouting of the nerve may not permit end-to-end suture. Wire sutures should then be used to anchor the identified proximal and distal nerve ends as closely together as possible to surrounding muscle, fascia or tendon. Thus they can more easily be found when a definite repair of the nerve gap can be undertaken. However, it is regarded as absolutely wrong to delay the repair of a peripheral nerve injury in a clean lacerated wound where there is no loss of nerve substance.

The longer the delay, the greater the retraction of the two nerve ends; the bigger the neuroma and fibroma which form at the sectioned nerve ends, the denser the surrounding scar tissue and the more difficult the identification of the nerve. The older the injury, the bigger the gap which one must overcome in approximating the nerve ends after resecting the neuromas; and the more extensive the neurolysis that is necessary in mobilizing the nerve and narrowing the gap, the more the tension at the site of the suture and the more the flexion of the joints and immobilization of the extremities in casts. The longer the delay, the



Figure 1. Left median and ulnar nerve paralysis 5½ years after injury to the forearm. Note the severe flexion contraction of the fingers, ankylosis of joints, fibrosis of tendons and atrophy of intrinsic hand muscles.

greater the peripheral muscle atrophy, the fibrosis of nerve, muscle and joint capsules, the greater the osteoporosis, the greater the ankylosis of joints and the more severe the trophic changes in the skin—which becomes infected easily and heals poorly (Figure 1). The greater the delay, the worse the results.

Sometimes a primary end-to-end suture is impossible because of too great a loss of nerve substance, because of gross infection or because of the serious general condition of the patient. A delay of from two to four weeks may become necessary. As soon as possible, however, old, healed wounds should be reopened, and nerves should be identified, freed from scar tissue and widely mobilized without injury to their branches. The involved nerve should be transposed so as to shorten its course, and an end-to-end suture should be performed.

After resection of the functionless neuromas, if mobilization of the nerves does not allow an accurate end-to-end apposition of the severed ends, one should consider using an autogenous graft for bridging the gap. Good functional results have been observed following the implantation of autografts. The nerve used for grafting should be as large as possible so that the caliber of the graft may approximate the caliber of the nerve to be repaired. The phrenic, the sural and the intercostal nerves have offered satisfactory grafts. Under certain circumstances, especially in the presence of a fracture, one can consider a shortening of the limb and fixation of joints in an attempt to perform an end-to-end suture of the nerve.

If two important nerves—such as the ulnar and the median, or the peroneal and the tibial—are equally affected and cannot be sutured because the gap to be bridged is too large, it is then advisable to use the less important of the two nerves to repair the more important one. Thus, the injured ulnar nerve may be used as a graft to repair the median nerve, or the peroneal nerve may be used to repair the tibial nerve.

In cases of extensive nerve damage resulting, for instance, from the excision of a neurofibroma or neurogenic sarcoma, or from an irreparable, partial injury to the brachial plexus, or if nerve grafts are unavailable or undesirable, the best possible method for obtaining the greatest amount of function in the affected extremity is the transplantation of tendons. There is great value in the transplantation of uninjured muscle tendons into the

distal portion of paralyzed muscle tendons. Tendon transplantations may be performed after most high injuries of the radial, ulnar and median nerves as an aid to functional recovery after nerve suture, especially in patients seen a year or several years after injury. This procedure helps to keep the joints from becoming ankylosed, and the muscles from becoming contracted or overstretched. Hand and fingers can also be kept in a better position of function by this means.

NERVE REPAIR IN CLOSED INJURIES

In a closed injury, the presence of a peripheral-nerve lesion presents a different problem. As in the case of spinal-cord injuries, the early symptoms of complete physiologic interruption of the peripheral nerves cannot be differentiated from those of complete anatomic section. If it were possible to differentiate them, the success of nerve repair would, of course, be greatly facilitated, for early operative treatment could be instituted.

Blunt force applied to a nerve trunk may produce a physiologic interruption without severance of nerve continuity and may be less damaging in the regions where the nerve is well protected. Fractures of bones may compromise the nearby nerves by severing them, or by involving them in bony callus. Following physiologic interruption, recovery occurs spontaneously in a large number of instances, and consequently, in the presence of a complete nerve interruption in which no evidence points to an anatomic severance, it is our practice to wait for signs of recovery. However, in the presence of a fracture or rupture of muscles, tendons or larger vessels, or the development of scar tissue, one must suspect direct injury to the nerve and should intervene early.

While waiting for evidence of recovery in a suspected physiologic nerve lesion, it is extremely important to make careful and repeated examinations for any signs of regeneration. It is never too late to do nerve suture, but the success of that procedure is inversely proportional to the interval between receipt of the wound and the operation.

Following a blunt injury, spontaneous regeneration usually appears early, and it is manifested by the presence of pain in response to a pinching of the skin in the sensory area supplied by the nerve, by spontaneous formication or paresthesia when pressure is applied to the nerve below the site of the lesion, by the arrest of muscle atrophy, by the return of tonicity and, later on, by the eventual return of voluntary movements and sensations in the previously paralyzed and anesthetic regions.

If, however, after a waiting period of from four to eight weeks, there are no signs of regeneration, and if the patient's atrophy increases, then operative intervention is indicated. I am inclined to explore the injured nerve as early as possible, for nothing can be lost through simple exploration, and much can be gained if the nerve needs repair. Oftentimes, one finds that nerves are surrounded or compressed by scar tissue, and simple excision of the scar, with neurolysis of the nerve, starts the process of recovery. It is also wise to free a nerve from scars that attach it either to bone or to skin, and to interpose either fat or muscle tissue between the nerve and the bone or between the nerve and the skin.

Late ulnar nerve palsy follows trivial, repeated irritation and injury to the nerve as it is stretched over the posterior aspect of the elbow whenever the upper extremity is bent. It may be associated with old fractures of the median epicondyle, with scarring or with osteoarthritic changes. Years or months after the insidious onset of tingling and numbness, a complete nerve paralysis may develop, with muscle atrophy and anesthesia. This situation is best corrected by transposition of the nerve to the anterior aspect of the elbow, preferably during the initial stage of paresthesia and before atrophy and paralysis have become evident.

FIVE-YEAR SUMMARY OF CASES

Personally, during the past five years at the hospitals of the State University of Iowa, I have seen 51 patients with peripheral nerve lesions. Twenty-six have suffered closed nerve injuries, 23 have had open injuries, and two have had nerve tumors. It was necessary to perform 18 nerve sutures, 16 of which had been unnecessarily delayed for months or even years. Twenty-three patients required only neurolysis or nerve transpositions, and eight patients required no surgical treatment. In the 18 cases of ulnar-nerve damage, there had been delays of from three to 10 months between open injury and diagnosis and definite treatment, and delays of from four weeks to eight years before the treatment of closed ones. Of the eight radial-nerve injuries, five were associated with fracture of the humerus. They all required operative intervention, and the delay between injury and repair had varied between three weeks and eight months. There were five median-nerve injuries, three at the wrist. All required operative treatment, and the delay between injury and repair had varied between one month and 14 years. Combined ulnar and median nerve injuries were seen in seven cases, in six of which surgical intervention was required. Injury had occurred in the forearm in five cases, and two of those were associated with fracture of the ulna and radius. Delay between injury and repair of the nerve had varied between six weeks and 5½ years.

There were seven brachial-plexus injuries—two of them birth injuries, four resulting from blunt injuries and one from an open injury. In three, exploration and neurolysis were performed, and partial spontaneous recovery was observed in three. The cases operated upon were seen three weeks, nine months and eleven months after injury, respectively. There were four cases of sciatic-

nerve injury, one resulting from a gluteal abscess, one from a fractured femur, one from a dislocation of the femur with fracture of the acetabulum, and one from a gunshot wound. One case had been operated upon previously, and showed partial recovery 2½ years later. The other three cases required surgical treatment, and the delays between injury and nerve repair had varied between one month and one year. One of the peroneal-nerve injury cases showed spontaneous recovery; the other had been produced by the resection of a neurogenic sarcoma.

In these cases the average delay between the receipt of the injury and the definitive nerve repair had been 7¾ months. In the majority of the 23 open cases, the lacerations had been clean. Nearly every one of them had been closed primarily, but in only one or two cases had an attempt been made to repair the nerve.

The following four case histories will serve to show the gravity of the difficulties which the surgeon encounters in evaluating and repairing neglected injuries of the peripheral nerves.

CASE NO. 1

On September 19, 1954, a physician sent us the following letter:

> Dear Doctor: I would like to have you see a young boy, age 4½, who, September 2, sustained a laceration in axilla of right arm, severing axillary artery and vein, both ligated.
>
> The laceration of median nerve along with severe trauma of entire nerve. The median was sutured end-to-end.
>
> Now I would like to have you see this lad as to suggestions to follow-up and any other suggestions you may have.
>
> Sincerely,
>
> (signed), M.D.

The boy had fallen from a fence on top of a water tank, and had cut his right axilla. The local physician, together with a consulting surgeon, had operated upon the child immediately, and the parents had been told that tendons, arteries and a nerve had been cut and that the artery had been tied off. The child had been kept in the hospital for 12 days.

On September 30, 1954, the examination performed at University Hospitals revealed a well-healed, irregular wound in the medial aspect of the superior portion of the arm, just below the axillary fold. The child was unable to make a fist, flex his hand or fingers, or dorsiflex the hand and extend the fingers. Some flexion was present at the elbow. There was also some contraction of the triceps. The entire hand was anesthetic, and there was a large area of anesthesia involving the anterior and posterior aspects of the forearm and arm up to the site of the scar.

According to our diagnosis, there was complete interruption of median, radial, ulnar, medial and dorsal antebrachial cutaneous nerves. The joints of the hand and fingers were in good condition, but showed some fibrosis in the shoulder and elbow. So that we might fully evaluate the patient's condition, we phoned the referring physician and asked him to send a copy of the operative report. However, no report was ever received.

Active physiotherapy was then thought to be the treatment of choice. In order to keep the arm in a neutral and functional position, we gave the patient an airplane splint which kept the upper arm abducted from the body, gave him freedom to move his elbow joint and kept the hand cocked in a slight dorsiflexion. He was told to wear the splint whenever he was not actively using his upper extremity. Massage to the skin and muscles was advised, together with active and passive movements of the joints, and electrical stimulation of various muscles. Further, we advised that the child be trained in moving the muscles which were only weak, rather than completely paralyzed. He received active physiotherapy from then on.

From the physician's statement, we thought that only the median nerve had been severed and primarily repaired, and that the other nerves had been no more than contused. Therefore, it seemed that conservative therapy—especially physiotherapy—would be the best possible treatment, and we expected some regeneration of function in the main three nerve trunks of the upper extremity after a period of three months.

The child was seen again on November 23, 1954, and obvious progress was found in his condition. He was still wearing his splint and undergoing active physiotherapy treatment.

When he was seen again, on January 4, 1955, he showed nearly complete recovery of the muscles innervated by the radial nerve. He was able to dorsiflex his hand and extend his fingers. He was also able to abduct the thumb, and there was some recovery of sensation over the dorsal aspect of the base of the thumb. He was then given a cock-up splint, with a rubber band attachment to strengthen the flexion of his fingers. He was advised to wear the brace at night and for a few hours during the day, and to continue active physiotherapy.

On March 29, 1955, we found some increase in the bulk of the muscles of the forearm. There was still atrophy of the hypothenar and thenar muscles, and sensory loss in the right ulnar and median nerve territories. Beginning contraction of the ulnar flexor tendons could be observed.

Because of the lack of recovery of median-nerve function, and because of evidence of beginning regeneration of the ulnar nerve and complete spontaneous recovery of the radial nerve, reexploration of the wound was decided upon, and the

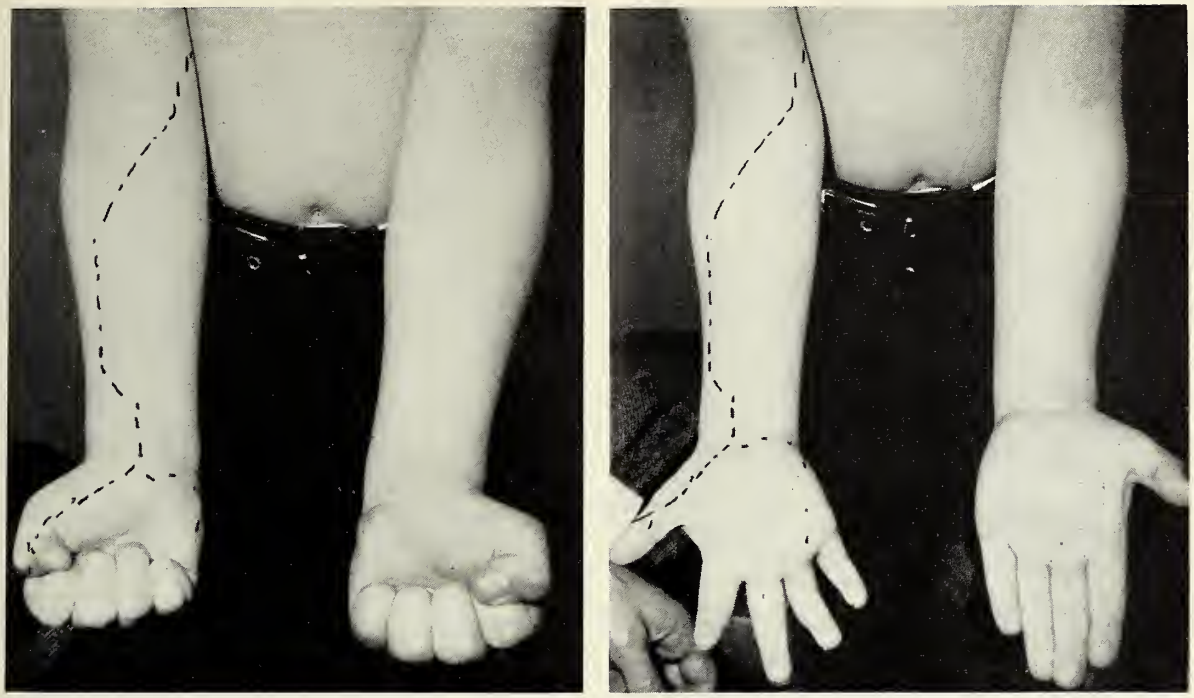


Figure 2. Right median, ulnar and radial nerve paralysis 18 months after suture of ulnar and nine months after suture of the median nerve in the axilla. Spontaneous regeneration of the radial nerve. Partial recovery of motor function, with anesthesia in median and hypalgesia in ulnar and medial antebrachial cutaneous nerve territories.

operation was performed on May 24, 1955. Complete right median nerve interruption was found, both proximal and distal ends of the cut median nerve ending in large neuromas. Complete interruption of the medial antebrachial cutaneous nerve was found. The ulnar nerve appeared to have been sutured previously, and there was a suture neuroma present. The brachial artery had been completely interrupted. The radial and musculo-cutaneous nerves which were also visualized appeared to be normal. All these nerves were embedded in scar tissue. Electrical stimulation of the ulnar nerve above and below the suture neuroma produced good contraction of the flexors of the hand and fingers, and stimulation of the radial nerve gave normal contractions too. The neuromas on the median nerve were resected for a distance of 1.5 cm. on the proximal segment and 1 cm. on the distal segment. This resulted in a gap of 7.5 cm. between the two resected nerve ends. Both proximal and distal nerve segments were then freed from surrounding tissue and scar, and a good epineural nerve suture was performed, a good approximation of the nerve ends being secured only through an acute flexion of the forearm upon the arm. The neuromas on the medial antebrachial cutaneous nerve were also resected, and the nerve was sutured. A posterior plaster splint was then applied, with the forearm in acute flexion on the arm. The patient was sent home on the second postoperative day.

In retrospect, I regretted not having explored the boy's wound immediately upon his referral, a month after the injury, for I believe that his chances of nerve regeneration and functional recovery would have been far better at that time. However, I had to believe and to depend upon the local physician's statement—one which, as we eventually discovered, was quite incorrect.

Fortunately for the patient, regeneration in both the ulnar and the median nerves progressed satisfactorily, and when he was last seen, sensation was beginning to return in the ulnar nerve distribution of his hand and fingers. There was good movement of all the flexors of the hand and fingers, including beginning contraction of the opponens of the thumb and the short flexors of the thumb. Abduction and adduction of the fingers, though still weak, was present, and the texture of the skin had improved. The boy is still receiving active physiotherapy twice a week (Figure 2).

CASE NO. 2

On February 1, 1956, we received the following letter from a surgeon:

Dear Doctor:

I have an industrial compensation case who was injured April 6, 1955, that I would like an appointment for you to see for advice and treatment if you see fit.

This man suffered a severe, deep laceration of the inner aspect of the left upper arm just above the elbow from a fall in their ice plant.

He apparently has a severed ulnar nerve, with resultant sensory and motor losses and changes, and now has developed some contractures and thenar and hypothenar muscle atrophy that is difficult for me to account for. Casualty Company, Des Moines, Iowa, has authorized this consultation and order for your treatment. Please advise me when I may send Mr. up to you and oblige.

(signed) M.D., F.A.C.S.

This patient was seen on February 9, 1956. He stated that on April 6, 1955—i.e., 10 months earlier—he had fallen into a multibladed buzz saw, injuring the posterior aspect of his left arm and elbow through three different lacerations. According to the patient, the fourth and fifth fingers of his left hand had been numb immediately following the laceration. He had been taken to a local hospital, the lacerations had been sutured, drains had been kept in the wound for six days, and he had been sent home on the seventh postoperative day. The patient said his physician had told him that the bone and the blood vessels were apparently all right, but that the nerve had been cut at the site of the crazy bone.

Since that time, the man had had numbness involving his fourth and fifth fingers, and the posterior medial aspect of his elbow had been painful on palpation. He also complained of coldness in his fourth and fifth fingers.

Examination at University Hospitals revealed atrophy of the hypothenar muscles, atrophy of the intrinsic muscles of the hand, and especially the dorsal interossei. There was no obvious atrophy of the thenar eminence, and movements of the thumb were normal. There was sensory loss to touch, and pain in the ulnar nerve distribution of the hand to a point above the wrist. There was much tenderness around the medial epicondyle of the left elbow, with palpable anomaly of the bone.

We thought that the patient had a complete ulnar nerve interruption at the level of the elbow, and we recommended nerve transposition from the posterior to the anterior surface of the elbow, and suturing. We do not know whether the surgeon who had sutured the lacerations saw or repaired the severed nerve at that time (Figure 3).

On February 22, 1956, the patient was operated upon, and a large amount of scar tissue was found in the ulnar groove posterior to the medial epicondyle of the elbow. A neuroma measuring 3 x 3 cm. replaced the ulnar nerve at that level, and a spicule of bone was imbedded in it. The neuroma was connected to scar tissue involving the synovial membrane on the medial aspect of the elbow. The neuroma was resected, and a clean end-to-end suture of the ulnar nerve could be performed without tension, after the nerve had been transposed from its original position to the anterior surface of the elbow. An x-ray of the elbow taken previously showed a clean fracture of the medial epicondyle, with displacement of the fragment above the elbow. The patient was discharged on the second postoperative day.

I am sure that in this 63-year-old man, regeneration of the ulnar nerve and functional recovery would have been far better if the nerve had been sutured immediately. The delay of 10 months had produced a great deal of atrophy of the intrinsic hand muscles, joint ankylosis and changes in the texture of the skin and nail beds.

CASE NO. 3

A 30-year-old senior medical student, the son of a physician, had been injured in September, 1941, while cutting a piece of plate glass. He had lacerated the palmar aspect of his right wrist. He had immediately been taken to the local hospital, where a reputable surgeon had repaired his tendons and closed the skin laceration, and had reported that no nerve had been injured. The patient subsequently had kept his arm in a cast for four weeks.

Following removal of the cast, the patient had noticed an absence of sensation over the palmar



Figure 3. Left ulnar nerve paralysis one year after injury at elbow. Note intrinsic hand muscle atrophy, flexion contraction of fourth and fifth fingers, and inability to make cone with tips of all fingers.

surface of his first, second and third fingers. At that time he had been unaware of the atrophy of the thenar eminence, but he said that because of his inability to perform many motions with his right hand, he gradually learned to use his left one for nearly all functions other than writing. The patient subsequently spent three years in the Air Corps, but noticed the atrophy of his thenar muscles only at the time he entered medical school.

On examination, the patient was unable to appose his thumb to his finger tips, and abduction of his thumb was incomplete. Poorly-healing burns were present on the external aspect of his right index finger. The nails of his first three fingers were stiff and hard, and these same fingers remained cold. Flexion of the distal phalanx of his index finger was weak. He was unable to make a fist with his thumb and his index and middle fingers. There was atrophy of the lateral aspect of his thenar muscles, especially around the metacarpal bone. There was also weakness of flexion of the second phalanx of his thumb.

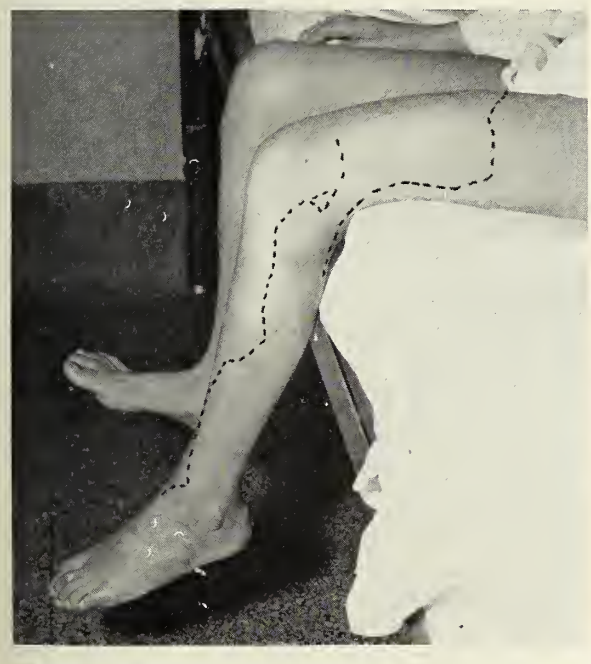
A diagnosis of old median nerve injury was made. When he was operated upon, scar tissue was found in the wrist around the proximal portion of the median nerve which terminated in a neuroma closely connected to the distal portion of the severed flexor carpi radialis tendon. Old sutures were seen attaching the nerve to the tendon. The neuroma at the site of tendon suture measured 2 x 1.5 cm. The distal trunk of the median nerve was found incorporated in dense scar tissue. The neuromas were resected, and an unsatisfactory nerve suture was performed. The gap between the two unsuccessfully mobilized segments of the median nerve remained too large even after flexion of the hand at a right angle over the forearm, and the suture was done under tension.

The patient showed no return of function one year after operation, but none could really have been expected after a 14-year delay.

CASE NO. 4

A 13-year-old boy, accompanied by his local physician, gave a history of having been struck by an automobile while riding a bicycle two months previously. The physician reported that he had seen the boy at the scene of the accident, that the left femur had been broken and compounded, and that it was sticking out through a laceration in the anterior thigh. A good eight inches of bone was exposed, and the periosteum appeared to have been stripped from the bone.

The boy had been brought to a local hospital and the physician had debrided the wound, reset the bone, held the fragments in place with a metal



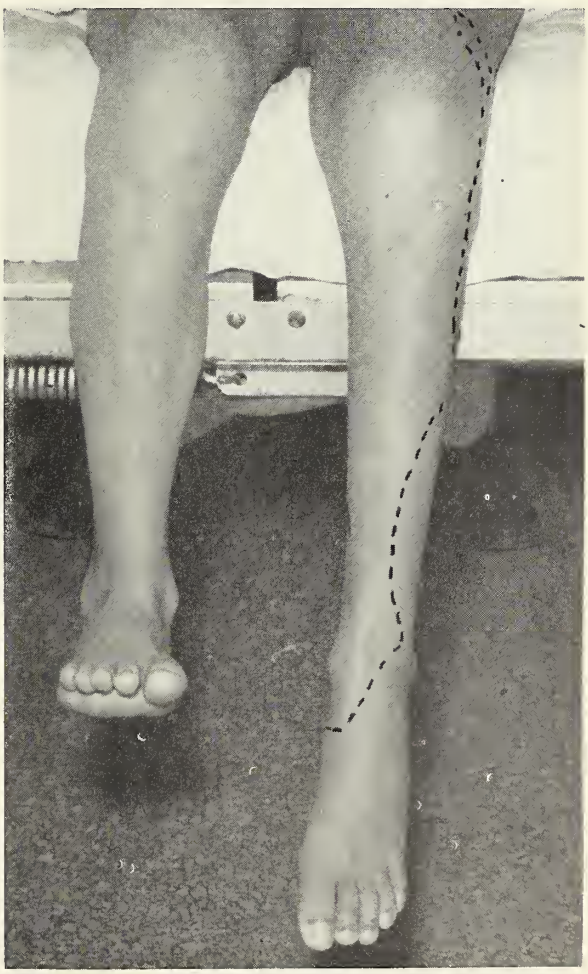


Figure 4. Left sciatic nerve paralysis five months after fracture of femur. Note atrophy of leg muscles, foot drop, and area of anesthesia over foot and lateral aspect of leg and thigh

plate, and then applied a body spica. He had performed no neurologic examination.

The patient stated that he had been unable to move the lower part of his leg from the time of the accident on. He said that after being struck, he immediately got up, but collapsed because his left leg would not hold him. Not realizing that his shoe had been torn off, he had then asked to have it removed. Also, his leg and foot had felt numb, and he had been unable to move his toes.

When examined by a surgeon two months after the accident, he still had complained of numbness involving the entire foot, toes and a part of the leg, and he had been unable to move his foot and toes. X-ray films brought along by the physican showed that there was good alignment of the bone, that the metal plate was in place and that callus was beginning to form.

Examination at University Hospitals revealed a scar along the anterior surface of the thigh, extending from a point 5 cm. above the patella to a point about 5 cm. below the inguinal ligament. There was an area of analgesia extending over the anterior aspect of the lower thigh, covering the lateral aspect of the entire leg and involving the entire foot. There was no motion of the toes or of the foot. The patient could flex the knee and contract the quadriceps only partially. He could slowly rotate the leg internally and externally, but he would not attempt flexion of the hip for fear of pain. The left patellar and ankle jerks were absent. There was obvious atrophy of both the calf and the thigh on the left side. A diagnosis of sciatic-nerve lesion was made (Figure 4).

The patient was seen again one month later. No recovery was found, and exploration of the sciatic nerve was recommended. Unfortunately, the operation was delayed until February 9, 1956, at which time five months had elapsed since the injury. The sciatic nerve was found to have been completely interrupted. The severed nerve segments had large neuromas at their ends, and they were buried in heavy scar tissue and firmly adherent to the callus on the posterior aspect of the femur. Dense scar tissue connected both neuromas for a distance of about 5 cm. The proximal neuroma was 2.5 cm. long and the distal one 2.0 cm., so that after resection of the neuromas there would have been a gap of at least 9.5 cm. It was found that this gap could not be bridged even by means of acute flexion of the leg upon the extended thigh. Therefore, only subtotal resection of the neuromas was done, and the neuromas were sutured end-to-end in the hope of slowly stretching the sciatic nerve so that at a later date an adequate and accurate end-to-end sciatic-nerve suture might be possible. Six weeks later, an osteomyelitis developed, and the metal plate uniting the bone fragments had to be removed. If, after adequate resection of the neuromas at a future operation, the sciatic nerve gap cannot be bridged, the peroneal nerve should be sacrificed and used as an autogenous graft to bridge the defect in the more important tibial nerve.

If this patient had had an adequate neurologic examination prior to the treatment of the fracture of the femur, or if his physician had listened to his complaints of paralysis and numbness in his foot and toes, then a primary end-to-end suture of the sciatic nerve could have been done without any difficulty, especially in the presence of a fracture. Subsequent observation and delay in exploring the nerve failed to help matters, and the new delay produced by the osteomyelitis will greatly jeopardize the patient's functional recovery.

Annual Meeting, Blank Hospital Association

All day Saturday and on Sunday morning, April 27 and 28, immediately preceding the annual meeting of the Iowa State Medical Society, the Raymond Blank Memorial Hospital Association will conduct its own annual meeting, which is to consist of scientific sessions in the Playroom at the Hospital and a banquet, Saturday evening, at the Savery Hotel. Both local and visiting physicians are cordially invited.

The complete program for the Raymond Blank annual meeting will appear in the April JOURNAL. In addition to a number of the members of the medical staff at Blank, Dr. Lawson Wilkins, associate professor of pediatrics at Johns Hopkins University, Dr. John Anderson, professor of pediatrics at the University of Minnesota, and Dr. Charles May, professor of pediatrics at the SUI College of Medicine, are to lecture.

The topics that will be discussed include congenital heart disease in infants, acute tubular necrosis of the liver, congenital goitrous cretinism, non-tuberculous cervical adenitis, childhood allergies, hemolytic disease in premature infants and pediatric medical education. A clinical pathologic conference will conclude the Sunday morning program.

The expenses of the meeting are being defrayed by voluntary contributions, by the registration fee ($15), and by gifts from Ross Laboratories and Mead Johnson Co.

Deaths From Coronary Heart Disease In Iowa, 1953-1955

WALTER L. BIERRING, M.D., CLIFF PAULEY, B.A., AND L. E. CHANCELLOR, F.A.P.H.A.

DES MOINES

SINCE 1950, conditions have been more favorable for the study of deaths from coronary heart disease by reason of the fact that the sixth revision of the INTERNATIONAL LISTS OF DISEASES AND CAUSES OF DEATHS provided a single category (Code No. 420.1) under which deaths from coronary heart disease were thenceforth to be recorded. Also in that revision, the MANUAL OF JOINT CAUSES OF DEATH was abandoned, and the physician who signed the medical certificate of death was given the responsibility for designating the underlying cause of death—the cause used in primary statistical tabulations. Since January 1, 1953, the Division of Vital Statistics of the Iowa State Department of Health has also asked, in its death certificate blanks, for information as to the occupation of the decedent immediately prior to his death.

This study of deaths from coronary heart disease in Iowa is based on the mortality data for the years 1953, 1954 and 1955, inclusive. During that period, 78,989 deaths occurred to residents of Iowa. Of them, 29,233 were due to some form of heart disease, and of the latter number, 14,640 resulted from an involvement of the coronary arteries. Thus, 37 per cent or approximately three out of eight of the deaths among Iowans were the consequence of heart disease, and in half of those 37 per cent, the coronary arteries were involved.

AGE AND SEX

The mean, or average, age of the 14,640 Iowa residents who died from coronary heart disease during 1953, 1954 and 1955 was 69.7 years. Half of them were 70.7 years of age and over. Of all of those who died of heart disease, the mean and median ages were 72.7 and 74.3 years, respectively. And the mean and media ages of all of the Iowans who died, from whatever cause, during those three years were 66.0 and 72.0 years, respectively.

During the period under consideration, 10,056 male residents died from heart disease specified as involving the coronary arteries. Thus, 68.7 per cent of all the victims of that disease were men. Male residents made up 60.4 per cent of those who died from all forms of heart disease, and 57 per cent of deaths from all causes.

The mean, or average, age of male residents who died from some form of coronary heart disease was 67.9 years, and half of the men who died as a result of that disease were 68.7 years of age and over. The mean and median ages at death of the men who died from all forms of heart disease were 70.7 and 72.1 years, respectively. Of the men who died from all causes, the mean and median ages at death were 64.4 and 70.2 years, respectively.

Coronary heart disease caused the deaths of less than half as many women residents of Iowa. Only 31.3 per cent of the deaths from that disease involved women. Of the deaths from all forms of heart disease, 39.6 per cent befell women, despite the fact that 43 per cent of the deaths from all causes were deaths of women.

The mean age of Iowa women who died from heart disease specified as involving coronary arteries was 73.6 years. Half of the female decedents from that disease were 74.5 years of age and over. The mean and median ages of women who died from all forms of heart disease were 75.8 and 77.3

DEATHS FROM HEART DISEASE SPECIFIED AS INVOLVING CORONARY ARTERIES

Iowa Residents, 1953-1955
Percentage Distribution by Age and Sex

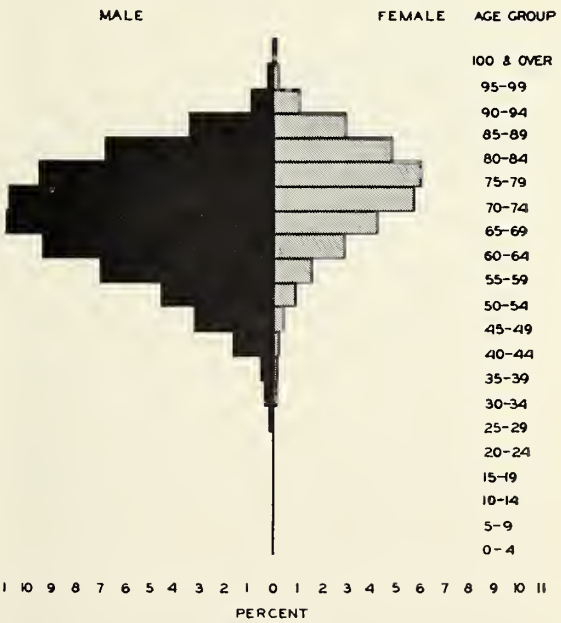


Figure 1

Dr. Bierring is director of the Division of Gerontology, Heart and Chronic Diseases, Mr. Pauley is a vital statistician and Mr. Chancellor is director of the Division of Vital Statistics, in the Iowa State Department of Health.

years, respectively. Of all the women who died, from whatever cause, the mean and median ages were 68.1 and 74.5 years, respectively.

TABLE 1

HEART DISEASE SPECIFIED AS INVOLVING CORONARY ARTERIES
AGE AND SEX OF DECEDENT
RESIDENT DATA

Iowa 1953-1955

Age Group	*Total*		*Male*		*Female*	
	NUMBER	PER CENT	NUMBER	PER CENT	NUMBER	PER CENT
Total	14,640	100.0	10,056	68.7	4,584	31.3
0- 4	2	—	1	—	1	—
5- 9	—	—	—	—	—	—
10-14	—	—	—	—	—	—
15-19	1	—	—	—	1	—
20-24	7	—	6	—	1	—
25-29	12	0.1	10	0.1	2	—
30-34	50	0.4	41	0.3	9	0.1
35-39	84	0.6	75	0.5	9	0.1
40-44	265	1.8	230	1.6	35	0.2
45-49	533	3.6	472	3.2	61	0.4
50-54	786	5.4	660	4.5	126	0.9
55-59	1,260	8.6	1,018	7.0	242	1.6
60-64	1,778	12.2	1,358	9.3	420	2.9
65-69	2,197	15.0	1,578	10.8	619	4.2
70-74	2,401	16.4	1,558	10.7	843	5.7
75-79	2,258	15.4	1,379	9.4	879	6.0
80-84	1,701	11.6	1,001	6.8	700	4.8
85-89	937	6.4	499	3.4	438	3.0
90-94	294	2.0	138	0.9	156	1.1
95-99	58	0.4	27	0.2	31	0.2
100 & Over	9	0.1	2	—	7	0.1
Unknown	7	—	3	—	4	—

Figure 1 presents all of the foregoing statistics in graphic form. The percentage distribution provides a simultaneous comparison of age and sex of the decedents. Table 1, in addition to the material contained in Figure 1, shows the numbers of people who died from coronary artery disease, divided into age and sex groupings.

OCCUPATIONAL GROUPS

The occupations of the deceased at the times of their deaths constitute a factor that may eventually prove to have some importance in the study of the causes of coronary artery disease.

In order to see any significance in the numbers of people from various lines of work who died of coronary heart disease, we must have knowledge either of the current numbers of individuals engaged in the various occupations—which we do not have—or knowledge of the total number of deaths which have occurred in each of those groups —which we do have.

Of the 3,809 deaths from all causes among professional men and women in Iowa during the three years covered by this study, 17.3 per cent resulted from coronary heart disease. Of the 4,342 individuals in managerial positions who died, 28.7 per cent succumbed to this illness. It is thus apparent that the death rate from coronary heart disease was significantly higher in the managerial group than in the professional one.

Figure 2 is a graphic representation of the relative importance of coronary artery disease as a cause of death among the members of 10 occupational groups. The fact that a considerably smaller percentage of the deaths among housewives had this cause was probably due to the relative immunity of women to coronary heart disease.

Table 2 provides a more nearly complete summary of the occupational data on the individuals who died from coronary artery disease, and an even more minute breakdown of the statistics according to the occupations of the deceased can be secured from the Division of Vital Statistics of the Iowa State Department of Health, Des Moines 19, Iowa.

A few remarks with respect to the table which compares occupational groups may prove of some value to individuals unacquainted with tables which employ two fold comparison.

Of the two comparisons relating to coronary heart disease, the first provides knowledge of the deaths from this disease when distributed by occupational group. (The total deaths from this disease being represented as 100 per cent and deaths within each occupational group a portion of that per cent.)

The second comparison considers the per cent of each occupational group that died as a result of coronary heart disease. This comparison was made by relating deaths from coronary disease with deaths from all causes. Such a comparison provides us with evidence of those occupational groups which are practicularly prone to death from coronary heart disease.

DISTRIBUTION BY COUNTIES

From one Iowa county to another, variations in the importance of coronary artery disease as a cause of death doubtless reflect the influence of both of the factors that have already been discussed. But age distribution is probably the more

DEATHS FROM HEART DISEASE SPECIFIED AS INVOLVING CORONARY ARTERIES

Expressed as Percentages of Deaths From All Causes Within Occupational Groups
Iowa Residents, 1953-1955

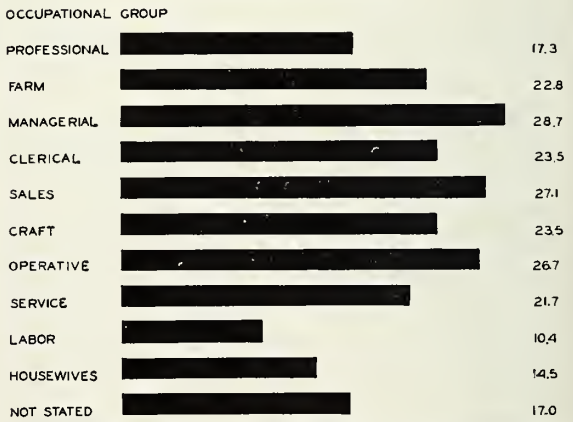


Figure 2. Of all the deaths which occurred to members of the respective occupational groups, the percentages attributed to coronary artery disease are shown in the column at the right. The bars are graphic representations of the relative importance of the disease as a cause of death in these groups.

DEATHS FROM HEART DISEASE SPECIFIED AS INVOLVING CORONARY ARTERIES

Places of Residence of Decedents
Iowa, 1953-1955

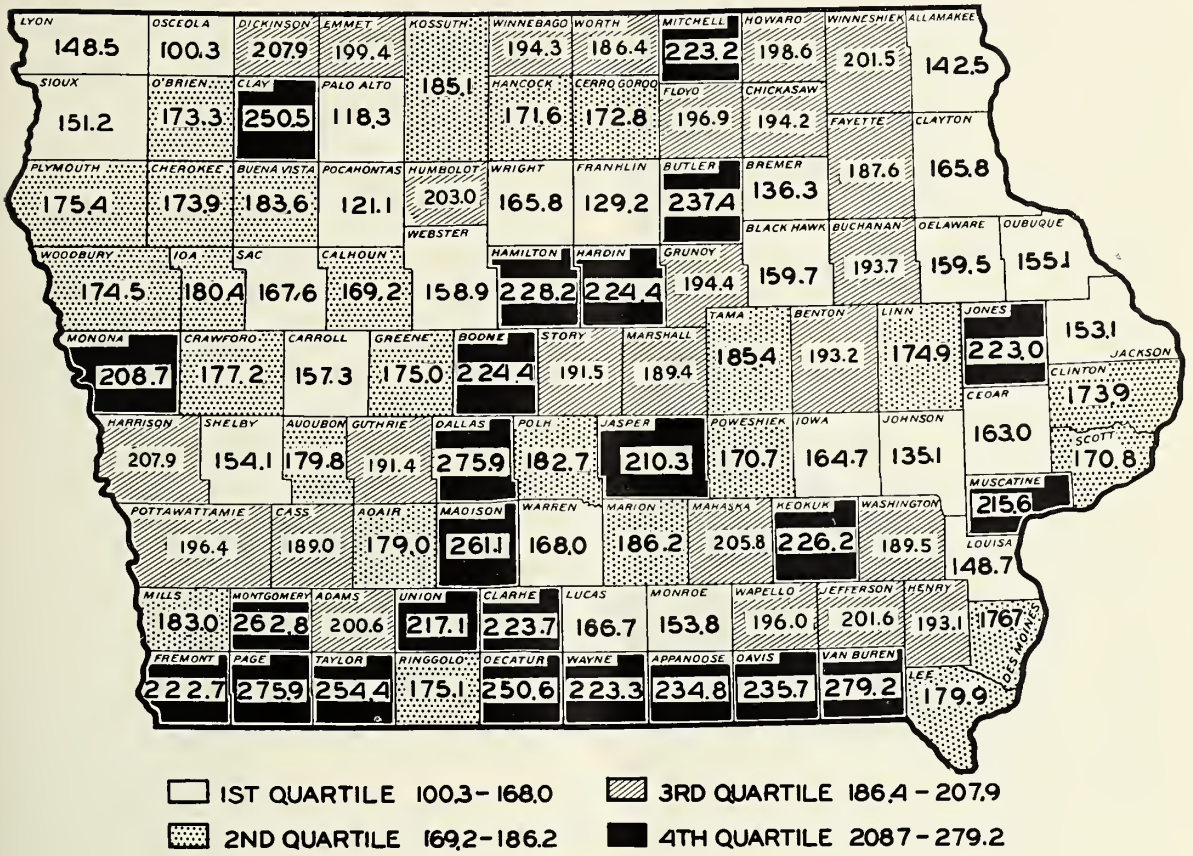


Figure 3

TABLE 2

HEART DISEASE SPECIFIED AS INVOLVING CORONARY ARTERIES COMPARED BY OCCUPATIONAL GROUP WITH TOTAL DEATHS FROM ALL CAUSES RESIDENT DATA

Iowa 1953-1955

	Total Deaths		Coronary Heart Disease Deaths		Per Cent Coronary Heart Disease Deaths of Total Deaths
	NUMBER	PER CENT	NUMBER	PER CENT	
Total	78,989	100.0	14,640	100.0	18.5
Professional	3,809	4.8	659	4.5	17.3
Farm	16,119	20.5	3,679	25.2	22.8
Managerial	4,342	5.5	1,244	8.5	28.7
Clerical	1,706	2.2	401	2.8	23.5
Sales	1,842	2.3	499	3.4	27.1
Craft	6,280	8.0	1,477	10.1	23.5
Operative	3,481	4.4	930	6.4	26.7
Service (public and personal)	2,455	3.1	533	3.7	21.7
*Labor	10,737	13.7	1,116	7.7	10.4
Housewives	27,883	35.5	4,045	27.7	14.5
Not Stated	335	—	57	—	17.0

* Includes 4,814 children of preschool age. The per cent of the labor group dying of coronary heart disease when the children were excluded was 18.8.

important of the two. When Figure 3 (the map showing the geographical distribution of deaths from heart disease specified as involving the coronary arteries) is compared with Figure 4 (the map showing percentage distribution of residents 65 years or older, by county) it is evident that the counties containing high proportions of elderly people have, in general, high rates of death from coronary heart disease. But some exceptions are brought to light by such comparisons, and they can be accounted for only by an extensive investigation of other factors related to geographic location.

The Enterline and Stewart* study of the geographic patterns of death from coronary heart disease within the United States provides evidence of considerable variations in rate from state to state, just as the Iowa study shows variations from county to county.

* Enterline, P. E., and Stewart, W. H.: Geographic patterns in deaths from coronary heart disease. Public Health Rep., **71**:849-855, (Sept.) 1956.

PERSONS SIXTY-FIVE YEARS OF AGE OR OLDER

Percentage Distribution

1950 United States Census

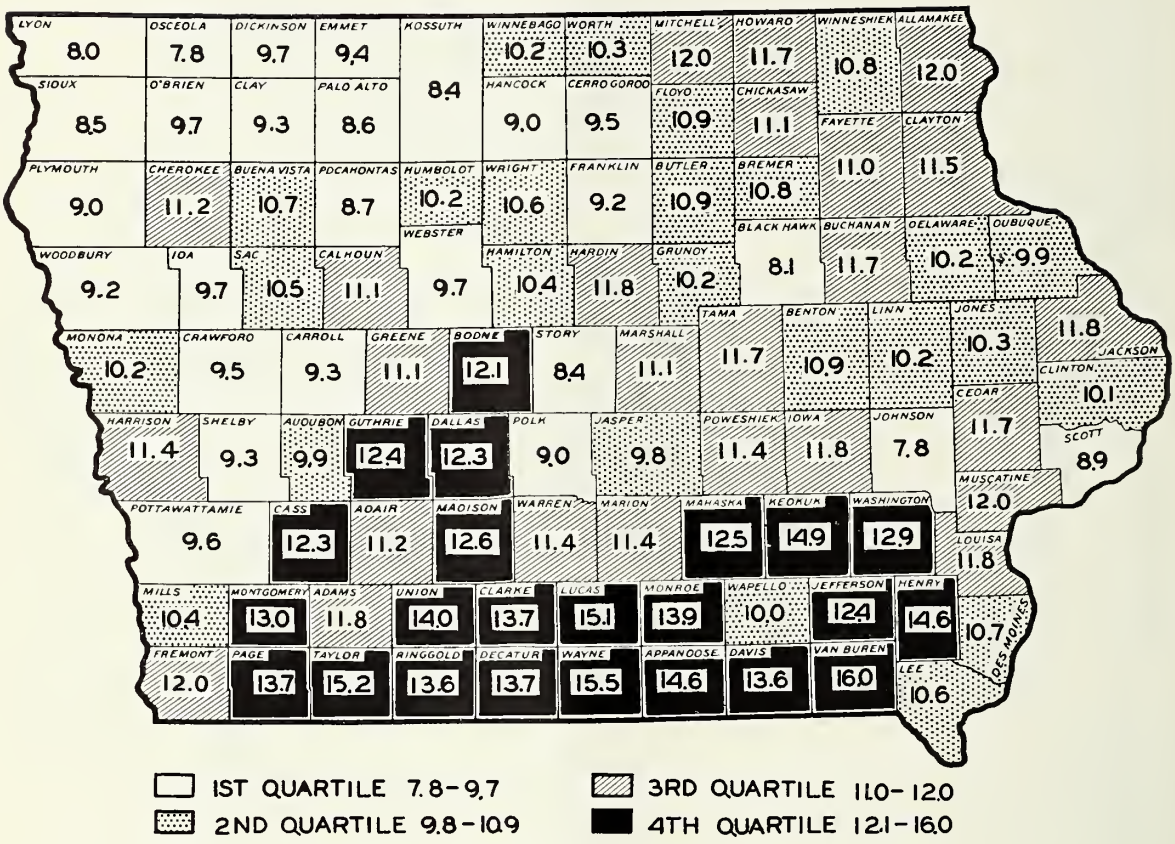


Figure 4

SUMMARY

The foregoing discussion represents little more than a brief survey of some of the factors associated with deaths from heart disease specified as having involved the coronary arteries. Further research in this area will undoubtedly lay the groundwork for a more thorough investigation of these and other factors related to the disease. The determination of such relationships is of considerable importance in the study of all forms of chronic illness.

The conclusions that can reasonably be drawn from this study are as follows:

1. Significantly more men than women died from the disease in Iowa during the period studied.

2. Deaths from coronary heart disease involved a noticeably younger population than did deaths from all forms of heart disease, and yet deaths from coronary heart disease involved an older population than did deaths from all causes considered together.

3. Coronary heart disease is apparently a much more frequent cause of death among individuals engaged in some occupations than it is among those engaged in others.

4. The geographic distribution of deaths from this disease appears to be closely related to the ages of the people who live in the various areas.

It is hoped that this epidemiologic type of approach to the problem of coronary heart disease may lead to the formulation of a clearer concept of the factors that are concerned in its etiology.

Coronary thrombosis and resulting infarction, it is now recognized, are the result of atherosclerosis of the coronary artery, and the real problem at the present day is the determination of the cause of atherosclerosis. The results of current research and investigation, in many parts of the world, as to the relation between atherosclerosis and heredity, hormones, nutritional factors, blood lipids and hypercholesteremia will be awaited with interest.

Occupational Health and Injury

A Panel Discussion by an Insurance Man, a Manufacturer and a Doctor

MR. CHARLES F. WHITE
CLAIMS SERVICE SUPERVISOR, LIBERTY MUTUAL INSURANCE CO.
CHICAGO

I SHALL NOT undertake to express the present day philosophies of the insurance industry as a whole with regard to industrial health and the care of work injuries under the workmen's compensation system, but I should like to touch briefly on a few of the things which we in my company feel are essential to the discharge of our responsibilities.

Those responsibilities consist of assistance to industry in the prevention of loss arising from occupational health hazards and accident causes, and secondly, the prompt and intelligent discharge of the social as well as the financial obligations assumed by insurance.

The workmen's compensation system in the United States is now in its forty-fourth year. The forty-eighth state to adopt this form of legislation for social welfare did so only seven years ago. We feel very strongly that the system's state of well-being today is the sum of the effort, intelligence and enterprise exerted by the three partners responsible for its operation—medicine, industry and insurance.

Of the three, insurance does not have a vested interest. We shall be permitted our present role just as long as we produce results that are worthwhile and as long as we contribute to the betterment of the beneficiary and fourth partner in the system, the employee.

The ever-present awareness is with us that we are in the same precarious position visualized for the medical profession, with respect to industrial medicine, in a thoughtful editorial entitled "Adapt or Be Taken Over," quoted in the February, 1956, issue of INDUSTRIAL MEDICINE AND SURGERY. Those who believe that socialization would attain broader results for the employee have long advocated taking the private-enterprise element away from the system.

We believe that the compensation-law provisions which are of greatest benefit to the employee are those relating to medical care and services for the employee. Cash benefits for disability are secondary. Thirty-six states now impose upon industry the obligation to provide medical services for life, if the nature of the injury necessitates such care.

In recent years, by virtue of so-called fringe benefits, many industries have assumed the full cost of non-occupational disability and health insurance plans. The cost runs to six times that of occupational coverage. Thus, industry has in many cases a 24-hour interest in the health protection of its employees.

The first principle of protection is prevention. Industry today starts with an investment of $14,000 in plant, machinery and tools for the average job established.

We believe that in industry, just as in aviation, the starting point of loss prevention lies in preventive medicine. Safety engineering, over the years, has produced near-perfection in the guarding of machines. But it cannot save workers from injuries which they themselves cause.

From our knowledge of hazards, we are asking industrial medicine to devise pre-placement medical examinations that will enable proper selection of personnel for the specific requirements of the job. The screening type of preemployment physical examination is largely "old hat." The person who is completely free of mental and physical defects cannot be found. But there are many important jobs for which even the most severely handicapped are well suited.

Having chosen the man for the job, it is important that we keep him there. We encounter a great diversification in the industries we insure. To assist them, we have developed a staff of loss-prevention nurse consultants, industrial hygienists and technical specialists who function under the supervision of regional and home-office medical directors.

In Boston, we have established a research and testing laboratory to assist in the detection and control of hazards that are either new or newly discovered in industry. Its projects range from safe handling of radio-active materials to the elimination of high-frequency noise.

In larger industries, the medical director is an indispensable member of a good management team. Our staff consultants can help him with his major problems. In smaller industries which may or may not have staff assistance from a full- or part-time medical director, our consultants provide the link between the in-plant health problem and the special skills of preventive medicine available in the medical profession.

Our emphasis is on prevention. The objective is and should be the detection of the symptoms of trouble ahead—the maintenance of morale and good health, rather than the treatment and cure of illness within the resources of the plant medical program. It should afford prompt treatment of minor ailments and injuries without economic loss to the employee or the employer. It should never be the equivalent of adequate treatment when special skills are required.

If I may be permitted to express the opinion of an observant layman, it seems to me that the general practitioner makes a particularly valuable contribution to the establishment and operation of an in-plant medical program. His training and experience in the over-all problems of health meet the needs of the plant population, if we consider it as a community brought together in isolated concentration once each day.

He forms a link at the professional level between the employee and his family doctor, or between the industry and the treating surgeon or other specialist in industrial accident cases.

When preventive measures fail, the second function of insurance comes into play.

Some years ago, we came to the conclusion that there were two things wrong with our approach to the adequate handling of industrial injury claims. First, we were too late in learning the real scope and depth of the injuries reported to us. We needed earlier orientation on the nature of the injury, in relation to the treatment required. We concluded that the defect lay in our comprehension of the reports that doctors sent us, and in our lines of communication with them.

Thus, commencing in 1943, we established medical advisors in the principal cities throughout the country. For the most part they are orthopedists, for our major problems are severe traumatic injuries. They serve to orient our claims people on the real nature and extent of injuries. By this means we are better able to meet our obligation to provide promptly the care or consultation that physicians recommend to us, and to make the disability payments prescribed by law.

If, in our handling of complicated injury cases, there are inquiries that we wish to make of the treating doctor, we make them through our medical advisor. Quite naturally, questions do arise about the diagnosis and the mode of treatment. We feel, correctly I think, that such matters are best handled in a doctor-to-doctor relationship.

Secondly, we concluded that despite the cures afforded by the best in medical and surgical care, an abnormal number of our cases progressed into prolonged disability, with no good reason except the patient's inability to resume an active role. Consequently, our company sponsored the establishment of rehabilitation centers in Boston and Chicago.

They are evidence of our recognizing responsibilities beyond the provision of curative medical services and the payment of compensation benefits. They are for the use of physicians in engendering the maximum restoration of function in the patients whom they treat, and for the development of abilities that will enable patients to return to their previous jobs or to some other form of gainful employment.

The economic value of rehabilitation is unquestioned. We have realized it in people with all sorts of injuries—from the hand injuries so prevalent in industry through more than 100 cases of paraplegia.

Though we believe in the propriety of testimonials no more than doctors do, let me close by reading excerpts from a letter which one of our rehabilitation nurses received from a patient treated in the Boston Center over two years ago. It sets out the personal, social and economic good she feels she derived from the program.

The author had lost her left hand by traumatic amputation while employed in a light metals industry. We had furnished her a prosthesis and trained her to use it.

"I feel I am a well-adjusted person," she wrote, "and I have accomplished so much these past two years. At work, no one looks upon me as a handicapped person, and they consider me like the next guy—that makes me very proud and happy. Sometimes I am asked to do things—I wonder if I can—To myself, I ask God's help and try—The amazing part of it all, I can usually do it well.

"Working has helped me very much. I would be lost without it.

"Best of all, I thank God for sending the people who helped me during those black days, and having the wonderful family I have. You know, my handicap has made me a better person, too. I try always to be a pleasure to my family, not a burden, and that goes for all my friends, too. I can truly say a handicapped person doesn't want pity, just treatment like the average person."

I am sure the lady has thanked her physician personally for the guidance and direction he gave her.

ROBERT F. LOETSCHER
VICE PRESIDENT, FARLEY & LOETSCHER MFG. CO.
DUBUQUE

FOR TOO LONG a time, industry has failed properly to appreciate the people on whom it depends. In consequence, the idea has spread throughout our country that there must be a spirit of antagonism between employer and employee, and that whatever one of them receives must, of necessity, be taken away from the other.

I reject that idea completely. To my way of thinking, the interest of the employer and the employee are mutual, and if that is true, it follows that what is good for one is good for the other, and what is bad for one is bad for the other. Nowhere are those principles more obviously correct than in the area of industrial health and injury.

I have a few suggestions that doctors may think are worth their consideration. First, in my opinion, there should be closer contact between the physician and the employer, so that the employer may learn the part he should play in eliminating poten-

tial causes of sickness and accidents, and in helping the worker who has returned to work either after or during treatment. Perhaps the doctor might talk with the personnel manager, but in many companies it would be even better for him to get in touch with the foreman under whom the patient works, for the foreman is personnel manager in his own department, and it is he who must take whatever action the doctor requests. I am sure the foreman, the personnel manager, the superintendent or anyone else in authority would welcome any suggestions that the doctor might care to make. That is not to say that it will always be possible for the company to agree with his recommendations, but certainly it will always consider them, and much good can come in this area.

Safety, of course, must be the number-one consideration, for if there is sufficient provision for safety, there need be no industrial injury. That point should always be first.

One of the best things that has happened to our company as regards the handling of occupational health problems was the establishment of a hospital, surgical, and accident-and-sickness weekly benefit program, along with life insurance coverage, for employees and their dependents. The company pays three-fourths of the cost, and the employee one-fourth.

In administering the plan, we feel we are fortunate in having arranged for the company to write checks on the insurance company's bank account and to deliver those checks promptly to the employees. Thus, the company gets credit for the money spent, and in addition, it has an opportunity to learn something of the health problems of its employees and their dependents. Careful and thorough work in this area has produced remarkable results in the improvement of employee relations as well as in the betterment of medical care for employees. This insurance is sometimes abused by the workers and, I am sorry to report, sometimes by the doctors, but we nevertheless consider it the best thing that has happened to us in this important health area, and we try to give very close attention to its administration so that the results may constantly be improved.

Most unfortunately, the idea that employer and employee must be antagonists has developed perhaps more in the area of workmen's compensation than in the field of general industrial health. Employers should be, and indeed are, striving to do better in promoting friendly, cooperative relations in this important matter. Whether his injury results in a temporary or in a permanent disability, whether he has been sick or has been injured, the sooner the employee can resume work, the sooner he will be happy. And of course if the man can perform useful work, the employer would rather have him at the plant, rather than at home drawing compensation pay. Thus, we encourage men to return to work just as soon as their physicians are willing to have them do so, and we do our best to give them jobs that they can perform satisfactorily despite their temporary or permanent handicaps. In our company, seniority is plant-wide and doesn't complicate that problem.

We believe that settlement of workmen's compensation should be handled just as personally as possible. For more than 30 years, our company has been self-insured. We carry our own risk and we pay our own losses. For other companies of sufficient size, we recommend self-insurance, for it offers the employer a special incentive for handling these matters as carefully and acurately as possible. Our company has approximately 1,000 employees. We feel that a firm with 400 or 500 could just as well be a self-insurer, though perhaps not a company hiring no more than 100. Although we pay our own losses, we carry what we call calamity insurance which would protect us in case of a major disaster. We do our best to see that our employees get the most competent care, for the best care is cheapest both for the employee and for the company.

Theorists who speculate upon the problem of industrial injuries sometimes conclude that there should be more inspection, direction or statutory provision regarding the giving of proper medical attention—that boards should be created to pick out physicians and to see that things are properly done. To my way of thinking, no good can come of increased state activity in the details of providing medical service, just as I believe that socialized medicine could give us no better care than we are now getting from private medicine.

Regretably, private practitioners in the industrial field aren't altogether blameless. Since I consider the medical profession the most ethical in the world, I am shocked to find that some doctors are completely unethical as regards workmen's compensation. If the bill is to be paid by an employer or by an insurance company, it seems that ethics are too often forgotten. Such practices benefit no one—certainly not the man who receives money fraudulently.

As we tell our employees, creating a job in our business represents an outlay of $6,000. In some industries the figure is much higher, and in some it is lower, but the 1,000 jobs in our plant cost $6,000,000 to establish. Yet I hasten to add that we consider the persons much more valuable than the buildings that house them and the machines and other equipment with which they work, and that we believe we can solve all of our problems if we can emphasize sufficiently the importance of the individual.

Whether the question is one of occupational health or one of occupational injury, I am sure that a personal solution, individually arrived at by the doctor, the worker and the company, will be an objectively good one.

ALLAN K. HARCOURT, M.D.
INDIANAPOLIS

WITH THE INDUSTRIAL REVOLUTION came a new type of medical practice: industrial medicine and surgery. As shops became plants and companies became corporations, it was necessary for physicians and surgeons to have a knowledge and understanding of a new set of problems.

But the application of medical knowledge is not new or different in this new field. The treatment of a patient's ailment is the same, whether the patient is an employee, a housewife or anyone else. Wherein, then, does industrial medicine differ from general practice? It is in the altered relationship between doctor and patient, in the wider field in which medical opinion is sought, and in the greater number of people who are interested in and entitled to know the facts about the patient's condition. This panel is typical of the situation. As an industrial surgeon, I am quite accustomed to having an insurance representative and a management executive figuratively looking over my shoulder as I work.

My industrial patients are sent to me by someone who is in authority over them. They may like me, trust me and accept my advice, but they have had no voice in choosing me. Therefore, I must make sure that they understand everything I do for them, in order to keep them from being critical. I must, of course, fill out innumerable forms so as to keep the employer and the insurance company apprised of my patients' progress. And I exercise supervision over my patients' lives in a greater than usual range, for in addition to all of the sorts of questions that a mother of growing children asks her doctor, management asks for my advice on such problems as absenteeism, alcoholism, personality conflicts between employees, and the mental and emotional fitness upon which advancement or demotion may hinge.

Management also seeks information and advice on industrial hygiene. Any new procedure that is introduced into a factory may raise problems requiring medical advice. Here is a new solvent or degreaser that is being marketed under a trade name. Its formula is a closely guarded secret. Plant executives want to know whether or not it contains tetrachloride, benzene or some other potentially harmful ingredient before they expose workmen to it. Or perhaps one or more operations in the plant create dust, and the managers want their plant physician to tell them the maximum safe concentration of it. They ask whether the procedure should be performed under a hood, or whether the workman will be safe without special ventilation. On other occasions, it is necessary that the industrial physician should take the role of detective. Even the common industrial diseases occur occasionally under circumstances in which the toxic substance is one that wouldn't ordinarily be suspected.

Of course there are no occasions when the industrial physician needs to compromise with the truth as he sees it, but there are some times when he must make a special effort to be unbiased. When he is called upon to testify before industrial boards and commissions, the ancient feud between doctors and lawyers—one which originated on the campus—flares up again. But whether he has been called by the plaintiff or by the defendant, he quickly learns that he is testifying as an expert witness for the benefit of the Court. He will give his findings accurately, interpret them fairly and be able to justify his opinion when he is cross-examined.

In recent years, unions have begun taking an active interest in the well-being of their members, and grievances arising from a lack of understanding of the care that has been given to injured employees are not uncommon. In this particular field, the industrial physician finds that he must be entirely objective, taking care not to give an opinion on the ability or inability of the employee to work, or on the necessity, which either a union steward or an official of management is urging, that he be retired.

The treatment of an ill or injured employee can be likened to an upright pole to which a number of wires are attached, and all but one of those wires are being tugged at by management, by the employee's union, and by his family and friends, each attempting to bend the pole in a different direction. The industrial physician, motivated solely by the doctrine of proper medical care, pulls at his wire in whatever direction and with whatever force may be necessary to keep the pole straight.

Industrial medicine and surgery constitute an interesting field of endeavor for a well-trained doctor of medicine. The physician's reward lies not in the adulation of infatuated patients, but in a sense of accomplishment that follows from his having given satisfaction to all concerned, despite the wide divergences of their interests. There should be no shortage of doctors in this area, for any physician who is qualified to practice can do a good job in an industrial setting. After a little experience, he will learn the knack of treating industrial cases, and will learn first to tolerate and later to enjoy his contacts with employees, with management and with insurance adjusters.

There is a shortage of nurses in industry, just as there is elsewhere, but it has been my experience that industrial nursing, with its regular hours, good pay, vacations and other benefits, competes well for nurses. Thus the shortage of available nursing help is not so great as it is in the private-duty or hospital categories.

I have been asked what is to be done about the nurse who diagnoses and dispenses medications in

the plant? Is she not practicing medicine? Let me tell you what we do about this problem in Indiana. Our Committee on Industrial Health has issued a pamphlet entitled "Directives to the Nurse in Industry." In the foreword, the nurse's responsibilities and limitations are spelled out frankly, and specific directions are then given her for meeting certain situations. Space is left at the back of the booklet, in which the physician under whom the nurse works can write further instructions for her guidance. No nurse should, and no nurse wants to be, placed in charge without a physician to report to. Of course, emergencies sometimes arise, and their nature may have been incompletely foreseen. Thus, in the indoctrination of a new industrial nurse, it is important that she be told, frankly, whenever she has overstepped her limitations.

One of you has said that he resents having some personnel man call to ask for the diagnosis and other information about one of his patients. He says he considers all such information confidential. Herein lies the peculiarity of industrial practice. In workmen's compensation there is no such thing as privileged communication. The law says so. Further, when an employee accepts direct benefits for absence due to illness, he waives privileged communication, in so far as his employer or beneficiary are concerned. The whole structure of sickness and accident insurance, by the way, is based upon the integrity and truthfulness of the physician. Thus, the personnel man is a partner in a team caring for an ill or injured man, and he has a legitimate right to know the facts. He has no more right to divulge those facts promiscuously than we do.

One of you has asked how a small employer who requires no more than part-time medical personnel can estimate the probable cost for an in-plant medical service. The cost depends upon what is meant by *part-time*. Providing suitable space and equipment for first-aid and examining care may be simple. A foreman with Red Cross first-aid training can man it, and a neighboring physician may agree to respond to calls on a fee-for-service basis. Such an arrangement may suffice for a plant employing between 25 and 50 men. Next, a full-time nurse with a specified doctor, group or panel to whom she is responsible would suffice for a plant of 100 to 300 men. If pre-placement examinations are desired, space for the examinations and regular daily or tri-weekly visits from a physician, at specified hours, are indicated.

The cost might vary between the expense of a simple installation and no salaries, at one extreme, to the expense of complete first-aid, emergency care and examination equipment plus physicians' and nurses' salaries, at the other. In our community, industrial nurses receive $300 to $400 per month for a 40-hour week. Physicians on call are usually on a fee-per-case basis. Examinations are usually done on a fee basis. Daily visits at specified times for examinations, dressings of injuries, plant hygiene inspections, and supervision of illness benefit plans usually require a physician to spend two or three hours per day in the plant, and men performing such services are on a salary basis. The charge varies from $3,000 to $6,000 per year for that work.

My answer to that question has been long, but the question was large.

Now for a point that another of you has raised: Price-cutting results from the fact that some companies shop around to find a doctor who will do their work cheaply. Patients do that too, but industry is getting wise. A few sad experiences with "cheap" material in a plant bring the production manager to the superintendent screaming about the cost of "cheap goods," and the same thing can happen in medical service. When such a situation arises, my best advice to doctors is "Have patience."

One of you has wanted to know whether more meetings of management, labor and doctor won't promote better understanding of each one's responsibilities. I am allergic to the word *meetings*, but I feel strongly that any one of the three involved in the care of an injured person in industry should feel free to discuss the problem with the other two whenever a problem comes up or whenever a progress report is indicated. I am glad to note that labor was included in this question. The doctor has no business participating in negotiations between labor and management, and should stay completely neutral in that field. But a good union steward has a sense of responsibility for the care of his "man" and is entitled to know the facts quite as much as is management. The suspicion with which labor regards the medical profession could be alleviated if the doctor made a point of being approachable. We are not labor; we are not management. We are maintenance men for the bodies and spirits of the workers.

No one asked me to do so, but I should like to close by commenting briefly upon the issue of free choice of physician as it pertains to industrial medicine. I believe strongly in free choice of physician *by the party who is to pay the bill.* That is the American way.

Management is charged with the entire expense of medical care for workers who become sick or are injured as a result of their employment. Its only control is in the selection of responsible doctors.

As a corollary, I believe that industrial physicians must always be cautious that they do not use their positions to further their own private practices. They should refer any non-industrial ailment to a physician of the patient's choice. That is free choice of physician.

In Vitro Antibiotic Sensitivity

A Compilation of Determinations from the SUI Diagnostic Bacteriology Ladoratory

H. F. HASENCLEVER, Ph.D.

IOWA CITY

THIS PAPER reports the antibiotic sensitivities of 3,600 pathogenic or provisionally pathogenic organisms isolated and identified in the Diagnostic Bacteriology Laboratory of the State University of Iowa. These isolations were made from a variety of specimens received from University Hospitals during a period of approximately 16 months, from November, 1954, through February, 1956.

Although routine *in vitro* determinations of sensitivity are not highly quantitative, the results obtained by several workers[1, 2, 3] have indicated that there is a positive correlation between such measurements and the clinical recoveries of patients to whom the antibiotics have been administered. Thus, they help the physician make a choice for therapeutic use.

LABORATORY METHODS

Two technics are employed in this laboratory for sensitivity determinations. The more commonly used method is the direct incorporation of the antibiotic into the appropriate culture medium. By this means, determinations are obtained for the more frequently used agents such as penicillin, tetracycline, etc. The paper disc technic is utilized for neomycin, polymyxin and furadantin.

RESULTS

The results in this study are presented in Table 1. The number of isolates studied is indicated with each organism. The values are expressed as the percentages of the organisms tested that were sensitive or resistant to the various antibiotics employed. For example, the figures appearing under P_1 indicate the percentage of organisms resistant to one unit of penicillin; under P_{10}, the percentage resistant to one unit but sensitive to 10 units; and under R, the percentage of strains resistant to the highest concentration used. Blanks in the table indicate that sensitivity determinations were not done.

A number of strains of other species, such as *Neisseria gonorrhoeae, N. meningitidis, Salmonella typhosa* and other *Salmonellae,* and *Shigella dysenteriae* and related *Shigellae* were isolated and identified in the Laboratory. However, owing to the infrequency of isolations, data on those organisms have not been included. Likewise, special tests were made from time to time with antibiotics other than the ones listed in the table, but the results were too few to warrant publication.

DISCUSSION

With some notable exceptions, the presentation of these results emphasizes the difficulty in predicting the antibiotic sensitivity of a given organism. It is evident that a number of the gram-negative organisms, as well as some of the gram-positive cocci, are quite variable in their reactions to certain of the commonly used antibiotics. Because of the acquired or innate ability of these microorganisms to resist these drugs, the physician's problem is made more serious. However, *in vitro* sensitivity determinations and studies by competent bacteriologists can be an invaluable aid to the physician in the selection of the proper antibiotic for use in bacterial infections.

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Dr. Hasenclever is an associate in bacteriology at the SUI College of Medicine. He wishes to express his appreciation to Miss Jane E. Doyle, Mrs. Martha S. McCutcheon and Mrs. Lois M. Swanson for their assistance in the compilation of the results, and to Dr. J. R. Porter, head of the Department of Bacteriology, for his aid in the preparation of the paper.

TABLE 1

THE RESULTS OF *IN VITRO* ANTIBIOTIC SENSITIVITY DETERMINATIONS OF ORGANISMS ISOLATED FROM PATIENTS AT THE STATE UNIVERSITY OF IOWA HOSPITALS

Organism	*No. of Strains*	*Erythromycin*		*Penicillin*			*Chloromycetin*			*Tetracycline*			*Streptomycin*			*Neomycin*		*Furadantin***		*Polymycin B*	
		E_1	R	P_1	P_{10}	R	C_5	C_{50}	R	T_5	T_{50}	R	S_5	S_{50}	R	N_{30}	R	F_{100}	R	Po_{30}	R
Staphylococcus aureus	785	90.7	9.2	18.4	3.9	77.7	5.1	90.7	4.1	23.0	8.0	69.0									
Beta hemolytic Streptococci	241			70.0	26.9	3.1	74.6	23.8	1.5	83.8	10.0	6.1									
Alpha hemolytic Streptococci	164			59.0	29.7	10.3	68.0	30.2	1.7	69.9	3.6	26.4									
Non-hemolytic Streptococci	199			27.0	61.2	11.8	44.2	54.7	1.0	41.0	9.2	49.7									
Diplococcus pneumoniae	171			80.1	18.1	1.8	89.6	10.3	0	95.8	2.9	1.2									
Haemophilus influenzae	36						100	0	0	100	0	0	100	0	0						
Escherichia coli	564						20.9	76.0	3.1	26.0	26.4	47.5	54.6	18.3	27.0	18* 94.4	5.6	21* 100	0	19* 73.7	26.3
Aerobacter aerogenes	375						11.4	67.6	21.0	9.9	12.3	77.8	23.0	6.9	70.1	59* 83.0	17.0	62* 69.4	30.6	62* 90.3	9.7
Proteus vulgaris	321						42.6	43.5	13.9	3.1	0.3	96.5	35.4	34.8	29.8	15* 80.0	20.0	157* 99.4	0.6	15* 13.4	86.6
Proteus morganii	42						7.1	26.2	66.6	4.9	44.0	51.1	14.3	11.9	73.8	15* 100	0	10* 0	100	15* 93.4	6.6
Pseudomonas aeruginosa	456						0.2	2.4	97.4	0.9	0.2	98.9	1.8	10.2	88.0	425* 37.8	62.2	12* 0	100	425* 99.3	0.7
Paracolobactrum species	119						12.6	63.0	24.6	17.6	14.3	68.1	31.9	13.7	54.3	20* 75.0	25.0	22* 86.4	13.6	19* 26.3	73.7
Alkaligenes faecalis	15						0	46.6	53.4	20.0	6.6	73.4	13.4	6.6	80.0						
Bacterioides species	16						100	0	0	93.7	6.3	0	0	0	100						
Proteus species	78						9.0	42.3	48.7	7.7	6.4	85.9	11.5	21.8	66.7	25* 76.0	24.0	28* 75.0	25.0	23* 26.1	73.9
Pseudomonas species	18						0	61.1	38.9	0	5.5	94.5	5.5	16.6	77.8	4* 100	0	2* 100	0	5* 40	60

* This indicates the number of strains tested against that particular antibiotic.
** All organisms tested with this agent were isolated from urinary specimens.

Nystagmus

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ALTHOUGH THE average practitioner is completely confused when he is confronted by a case of nystagmus or hears it mentioned in the course of a discussion, the facts that will enable him to deal satisfactorily with it are relatively few and comparatively simple. It is important that he be able to recognize the entity and determine its etiology, for it may be one of the early findings in disease of the central nervous system or of the inner ear.

Nystagmus may be defined as abnormal oscillatory movements of the eyes. When the speed and amplitude of the movements are equal, the nystagmus is called "pendular," and when there is a slow drifting followed by a quick recovery component, it is called "jerk." The "direction" of the nystagmus is the direction of its quick component.

Nystagmus which is present only in the direction of gaze, with regard to the quick component, is called "Grade I." "Grade II" is a nystagmus which is present in the forward position as well as in the direction of gaze, and "Grade III" nystagmus is a type which is present in the position of gaze, in the forward position and on movement of the eyes toward the direction of the slow component. Grade I jerk nystagmus is never considered abnormal, but Grades II and III are indicative of disease, and pendular nystagmus is always abnormal.

Nystagmus can be vertical or rotary, as well as horizontal, and frequently it is of a mixed type.

Though certain types of movements seem frequently to accompany certain diseases, one cannot determine etiology merely by observing the quality of the movements.

PHYSIOLOGIC CONSIDERATIONS

Certain reflexes and normal nerve tonus from the central nervous system hold the eyes normally in the forward position. The frontal lobe is thought to be responsible for initiating voluntary command movements that induce changes in the direction of gaze, and the occipital lobe is considered responsible for the coordination of reflex follow movements. The nerve pathways in question are somewhat obscure, but it is supposed that in the contralateral subcortical centers, the vestibular nuclei control horizontal movements, and the superior colliculi control vertical ones. From those subcortical centers, the tracts then pass, by way of the medial longitudinal fasciculus, to cranial nuclei III, IV and VI, the fibers from which innervate the extraocular muscles.

The position of the eyes is controlled by static reflexes from the otoliths and by kinetic reflexes from the vestibular nuclei. In addition, the ocular fixation reflex modifies the responses of the extraocular muscles during the act of fixation in such a way as to maintain the position of the eyes upon the object of regard.

The functioning of the vestibular nuclei and of the tracts running from them to the extraocular muscles, by way of nerve nuclei III, IV and VI, may be tested by displacing the endolymph in the labyrinth either toward or away from the ampulla. For this purpose, one seats the patient in a Barany chair and turns him. During this maneuver, the endolymph is displaced in the direction opposite that of the turning, so that the ampulla is stimulated on the side toward which the patient is being turned. As the turning stops, the displacement is in the opposite direction.

Caloric irrigation also may be used. In this test, either cold or warm water is squirted against the patient's ear drum. Warm water displaces the endolymph toward the ampulla; cold causes the endolymph to move away from the ampulla.

With the endolymph displaced toward the ampulla, the eyes are turned horizontally toward the opposite side (slow phase). This movement is then followed by a quick recovery toward the side of the stimulated ampulla. As one thus provokes a jerk nystagmus cycle, he times it and compares his findings with normal values to find out whether the patient has exhibited hyper or hypo function. The sides are tested separately.

PHYSIOLOGIC NYSTAGMUS

Physiologic nystagmus is the consequence of a slight extraocular muscle weakness on extreme lateral gaze. The muscles are unable to hold the eyes in this position, and there is a drifting away from the object of regard (slow phase), followed by a quick recovery movement (quick phase). This phenomenon can be found in about half of the population.

"Railway" or optikokinetic nystagmus occurs as a result of a shift of fixation from one object of gaze (slow phase) to another object (quick phase). It differs from the nystagmus of extraocular muscle weakness in that the quick phase is toward the midline instead of away from it. Clinically, one tests it by rotating a drum of fixation targets in the lateral fields of gaze. The absence of optiko-

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kinetic nystagmus may be an indication of a lesion of the occipital lobe, of the temporal lobe or of the internal capsule.

PATHOLOGIC NYSTAGMUS

The origin of pathologic nystagmus may be considered as being ocular, central or vestibular (labyrinth and vestibular nerve). Ocular nystagmus develops when the fixation reflex functions poorly. The usual cause is poor vision, resulting in most cases from congenital defects in the eye itself, such as cataracts, corneal disease, or anomalies in the retina or in the optic nerve. Since the visual acuity is very low, the eyes are unable to fixate well and nystagmus develops. The characteristic movements of ocular nystagmus are pendular excursions of the eyes, frequently referred to as "searching movements."

Congenital nystagmus is a type that may be classified as ocular, although no gross anatomical defects exist. The nystagmus is usually present in all fields of gaze, but it may be reduced when the patient looks off center. Visual acuity is usually decreased. This nystagmus may be horizontal, vertical or rotary, but most commonly there are both horizontal and rotary components.

Central nystagmus results from interference with the normal function of the vestibular nuclei or with its tracts. Spontaneous vertical nystagmus may be observed, but vertical and rotary forms also may occur, and usually they are mixed. The commonest causes of central nystagmus are multiple sclerosis, tumors, vascular accidents and inflammations. Cerebellar lesions cause nystagmus by involving the vestibular nuclei or their tracts. The deviation of the eyes is usually toward the side of the lesion, representing a paralytic rather than an irritative type of lesion. The nystagmus may begin with nystagmoid movements, progress to a grosser nystagmus and finally become a complete palsy. The reverse sequence may take place as the lesion subsides. Usually, central lesions are so widespread that there are many other localizing signs in addition to the nystagmus. In contrast to the vestibular type, central nystagmus usually remains quite stationary.

Vestibular or end-organ nystagmus results from an over- or understimulation of the vestibular nuclei by the labyrinth via the vestibular nerve. The common etiology of vestibular nystagmus is disease of the inner ear. Clinically, the function of the labyrinthine and vestibular nerves is tested by means of the same technics as those used to check the function of vestibular nuclei, namely displacement of endolymph toward or away from the ampulla. In this type of nystagmus, there are usually mixed movements—rotary, horizontal and vertical. Rotary nystagmus is said to be more strongly indicative of vestibular disease than are the other types. Nystagmus of the vestibular type tends to diminish with the passage of time. There usually are some associated symptoms in vestibular nystagmus—tinnitus, vertigo and deafness.

SUMMARY

Physiologic nystagmus may be differentiated from the pathologic sort in that it is present only in the direction of gaze.

Pathologic nystagmus can be differentiated into ocular, central and vestibular. Pendular oscillations and poor visual acuity are indicative of the ocular type. Jerk nystagmus—mixed and rotary—along with the symptoms of vertigo, tinnitus and hearing loss suggests labrynthine or vestibular nerve lesions. The pure vertical or horizontal type of jerk nystagmus, without vertigo, tinnitus and hearing loss, is associated with central lesions.

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TABLE 1

CHARACTERISTICS OF NYSTAGMUS

Type	*Vision*	*Age at Onset of Nystagmus*	*Movement*	*Course*	*Associated Symptoms*
Physiologic	Good	Normally present	Jerk—only in extreme lateral gaze	Remains constant	None
Pathologic					
Ocular	Poor since birth	Infancy	Pendular	Remains constant	None
Central	Variable	Time of disease	Jerk	Usually remains the same	Dependent upon type of lesion and area of the brain
Vestibular	Usually good	Time of disease	Jerk	Diminishes with time	Tinnitus, vertigo, hearing loss

State University of Iowa College of Medicine

Clinical Pathologic Conference

October 31, 1956

SUMMARY OF CLINICAL FINDINGS

THIS IS THE STORY of a 43-year-old farmer whose illness may have begun at age 30, with a gradual change in his behavior which progressed until he died.

His wife, who supplied much of his history, stated that they had had a normal courtship and an early marriage. After two years, however, the patient had developed impotence, and had become progressively frustrated and upset. Masturbation became a nightly habit for him, and during the last six years, he had masturbated during meals, while watching TV and while napping. During the last three years, he had been overly concerned with sexual problems, and although he avoided making any sexual advances toward his wife, he was extremely jealous and suspicious of her activities.

At night he was restless, and would jump out of bed and stand at the window, turn the lights on and off, go frequently to the bathroom or stand in the corner. During the last two years, he slept a great deal during the daytime. When he was startled or excited, his neck became stiff and arched, and he threw back his head and opened his mouth. His eyelids fluttered, and his arms and legs twitched.

While watching an exciting movie, he remained in this attitude throughout the show. Unconsciousness, trauma or convulsions never occurred. He was always able to take care of the farm work, including both the physical labor and the management. He developed strange, gluttonous eating, not only at mealtimes but also between meals, and he drank large quantities of water.

About six weeks prior to his death, he developed a slight cold, and a week later began coughing up purulent and bloody sputum. There was no fever. His physician had advised him to remain in bed, but he went duck hunting and became chilled.

Thereafter, the patient suddenly developed severe occipital headaches, and they soon became generalized. He pounded his head with his fists and butted his head against the wall. A stumbling gait, repetitive, hesitant speech and a weak grasp appeared. After a brief stay at a local hospital, he was transferred to University Hospitals.

On his admission here, a physical examination showed no nystagmus. The cranial nerves and the optic discs were normal. Coarse rhonchi were scattered throughout the chest. The Rhomberg test was negative. The patient could hop and walk on his heels and toes, the strength in his arms and legs was normal, and he had a normal alternate motion rate. No sensory loss could be found.

X-ray examination, including laminography, showed a posterolateral mass in the upper lobe of his right lung. A lumbar puncture was done. The initial pressure was 270 mm. H_2O. The spinal fluid had a "ground-glass" appearance, and contained 1,420 cells per cubic millimeter, most of them being lymphocytes. No neoplastic cells or acid-fast bacilli were seen. The Pandy reaction was 2+. The protein was 103 mg./100 ml., the sugar was 32 mg./100 ml., and the chloride concentration was 122 mEq./liter. Cultures and guinea-pig inoculations were instituted. The white blood cell count was 19,500 per cu. mm., with 95 per cent polymorphonuclear leukocytes. An old tuberculin skin test was reported to be negative.

The patient's temperature varied between 99° and 103.4°F. during the 10 days that he was observed prior to his death. He was increasingly restless during the first eight of those days, and then he became comatose and had Cheyne-Stokes respirations. The fundi were normal. During his last 36 hours, his extremities became flaccid. The Babinski reflex was absent. The blood pressure was 170/70/60 mm. Hg. Terminally, he developed cyanosis, tachycardia and apnea. He was placed in a respirator, but his pulse became weaker and finally disappeared.

CLINICAL DISCUSSION

Dr. Russell Meyers, Neurosurgery: Today's protocol narrates the story of a man in middle life whose described behavioral changes presumably had begun when he was 30 years of age, some 13 years before he came to our notice. Whatever the etiology of those behavioral changes, it would appear safe for us to discount infectious and neoplastic processes. Neither of those types of disease is likely to run a progressive intracranial course for so protracted a period as is covered in our protocol, before culminating in the patient's death. It is well, however, for me to point out at the start that I am talking in terms of probability, rather than of certainty. Cases have been recorded in which not only benign but even infiltrating tumors have persisted for as long as 17 years before causing death. A celebrated case of this sort was reported from Bellevue Hospital by Drs. Louis Hausmann and Lewis Stevenson.

The story obtained from the patient's wife spelled out a number of psychosexual disturbances as well as some departures from the social amenities. I know of no neurologic disease which, in and of itself, would give this schizoid-like picture. Hence, I should be inclined to suppose that this man had at least two things wrong with him: (1) a schizoid personality derangement, very likely a full-blown schizophrenia, and (2) an independent intracranial process that was responsible for the course of events leading to his death.

Although the psychologic disorders that the patient exhibited do not appear reconcilable with intracranial neoplasms or progressive low-grade infectious processes of the brain, we must bear in mind that they could have been related to a progressive degenerative disease of the nervous system such as Alzheimer's presenile psychosis, Niemann-Pick's disease, etc.

Even in this connection, however, it is important for us to note the pathogenetic relationship that can exist between such brain lesions and the behavioral disturbances exhibited by a patient. If any five individuals are given doses of alcohol, barbiturate or another related drug large enough to produce a perceptible change in their customary social behavior, they are likely to exhibit not only quantitative but qualitative differences in their actions. Mr. A may withdraw into one corner of the room, fall silent and become emotionally "flat"; Mr. B may turn gleefuly to pinching the glutei of all attractive and available females; Mr. C may become belligerent; Mr. D may become jocose and extraverted in the extreme; and Mr. E may shed tragic tears.

These behavioral changes cannot be imputed to the drug alone. Rather, they reflect a weakening of the individuals' psychosocial inhibitions and the consequent emergence of ordinarily repressed drives or even of personality disorders which, we have reason to presume, are present in each of us in a more or less occult form. Such manifestations are obviously not "due to" the alcohol or barbiturate, but to a *reaction* between the drug and the individual's personality and background. In principle, what I have had to say about drugs may be extended to any degenerative disorder of the nervous system, whether diffuse or disseminated. The particular pattern that emerges —schizophrenic, cyclothymic, or whatever—depends less upon the degenerative agent than upon the personality substrate.

But as I have already said, in the particular case now at hand, I am inclined to disregard the likelihood of a degenerative disorder. There are, indeed, very few diseases of the nervous system that make their appearance for the first time when patients are approximately 30 years of age. Huntington's chorea is a notable exception, but it has such a characteristic hyperkinetic accompaniment and is so often attended by a familial background of neurologic disorder that I am inclined, in the absence of a history that would suggest it, to disregard that possibility.

Next, we note that our patient exhibited a voracious, gluttonous appetite, and that he drank large quantities of water. These phenomena suggest that we may be dealing with some neural derangement of the mammillo-lateral hypothalamic feeding and drinking mechanisms. Yet these symptoms are sometimes seen in schizophrenia. For the present, therefore, we shall suspend judgment as regards their place in the over-all picture and move on to other considerations.

We are told that the patient arched his spinal axis when excited, and maintained that curious posture while he watched a moving picture. This behavior, certainly, suggests the attitudinizing seen in the catatonic form of schizophrenia, and such an interpretation seems to me much more tenable than one involving the neurologic condition known as decerebration, in which the opisthotonic posture is regularly accompanied by a serious derangement of "consciousness," usually in the nature of stupor or coma.

The protocol asserts that unconsciousness never occurred in this patient. Hence, I should be inclined to discount the possibility that his posturizing under conditions of excitement resulted from a lesion in the pretectal, midbrain, reticular or hypothalamic regions.

Thus far, then, all considerations point toward a protracted psychosis, most likely schizoid, with some catatonic and hebephrenic features.

We now come to some data which are fairly unequivocal. The patient is said to have developed a cold six weeks prior to his death, and to have coughed up a purulent and bloody sputum. This observation strongly suggests a lesion in the lung —an absess or a tumor with secondary abscess formation in the surrounding necrotic area. Here, for the first time, we encounter a factor that could tie in with the clinical course that ultimately proved fatal.

We are told that sometime following the onset of the "cold," the patient developed occipital headaches, and that they soon became generalized. Infectious processes of the brain in the form of meningitis, or brain abscess(es) with or without meningitis, are likely to give rise to occipital headaches, particularly if the meninges are inflamed. The same can be said of brain tumors in the posterior fossa, or of disseminating brain tumors and of quasi tumors that inflame the meninges.

Stumbling gait, repetitive, hesitant speech and weak grasp are relatively non-specific neurologic signs. They suggest, but certainly do not force the conclusion, that our patient had something wrong with his cerebellum. Indeed, these signs might reflect a derangement of any one or several of the parts of the nervous system, from the frontal and/or parieto-temporal lobes to the brain stem and its

cerebellar connections. They not uncommonly appear in individuals afflicted with toxic or infectious systemic processes, including drug poisoning. Thus, in themselves, these symptoms do not help us much in our effort to comprehend the etiology and morbid anatomy and physiology responsible for this patient's clinical course.

Let us now return to the two considerations suggested above. We may be dealing with either a neoplasm of the lung with metastasis to the brain, or with an infection independent of or secondary to a neoplasm of the lung—one which metastasized to the nervous system. The protocol tells us that coarse rhonchi were scattered throughout the chest. It tells us also that the Rhomberg test was negative. The absence of the latter sign almost permits exclusion of the cerebellum as the site of a metastatic tumor or abscess. At least it permits the exclusion of the flocculonodular complex of the cerebellum. Moreover, the protocol indicates that the patient could hop and walk well on his heels and toes. These data justify us in concluding that the cerebellum had not been compromised. In the human being, the flocculonodular lobe is the only part of the cerebellum that has to do with equilibrium. The greater bulk of the cerebellum, embracing the neocerebellum (lateral hemispheres) and the paleocerebellum (anterior vermis), is responsible for the distribution of postural myotonus and for the coordination of the limbs that is exhibited in such actions as hopping and walking on the heels and toes. Since neither of these functions was deranged, I feel safe in concluding that the cerebellum had escaped involvement and that we must look to the cerebral hemispheres for the seat of the patient's pathologic processes.

The x-ray examination lends confirmation to our suspicion that the lungs were an important source of trouble. Unfortunately, it does not help us to choose between infectious and/or parasitic processes, on the one hand, and neoplastic processes with or without infection, on the other. The pathology could conceivably have been coccidiomycosis. But whatever its nature, it begins to look as if a metastatic process from the lung to the cerebral hemispheres was at the root of the difficulty.

Studies of the spinal fluid yielded data that favored an infectious process, presumably one having a low-grade activity. The spinal fluid is said to have had a ground-glass appearance and to have contained nearly 1,500 cells per cu. mm., most of which were lymphocytes. No neoplastic cells or acid-fast bacilli were disclosed by the microscope. These data do not, of course, permit exclusion of neoplasm or tuberculous meningitis, but they make them less likely than others of the possibilities. The total protein in the cerebrospinal fluid was reported at 103 mg./100 ml.—fully twice normal—and the Pandy reaction was positive. The sugar content of the cerebrospinal fluid was no more than 32 mg./100 ml.—about half of the normal. The latter findings strongly suggest that a pyogenic process was at work. It is well known that pyogenic organisms are capable of utilizing, and therefore reducing the level of, cerebrospinal-fluid sugar. The chloride level was 122 mEq./liter. This finding, together with the information given us regarding the negative results of the guinea inoculations, virtually permits exclusion of tuberculous meningitis. The patient's white blood count was nearly 20,000 cells per cu. mm., with 95 per cent polymorphonuclear leukocytes. This finding further favors an infectious process in the lung, with or without neoplasm.

The remainder of the story—the portion describing the terminal event—is non-specific and could well be duplicated in a great variety of conditions. It does not help us much in our differential diagnosis.

Let us now recapitulate and attempt to synthesize our findings. It appears that we are dealing with a supratentorial, metastatic infectious process secondary to a lung abscess—either associated or unassociated with neoplasm of the lung. The brain abscess would appear to have been located in the frontal lobe—one of the "silent" areas of the brain, capable of bearing one or more brain abscesses without producing much evidence of focal neurologic derangement. There is only one other brain area—namely the parietal lobes—that might accommodate a fairly large pathologic lesion without producing focal neurologic derangement. Experience with metastatic lesions from the lung indicates that the parietal lobe is a somewhat more likely site than any of the others, but to choose between the frontal and the parietal lobes, singly or in combination, we should need the data that could best be furnished by ventriculography and/or angiography.

It is well for us to bear in mind that metastatic abscesses can be multiple, and that a single large abscess can sprout one or more "daughter" abscesses. It would be no more than reasonable to suppose that the lesion involved both the frontal and the parietal silent areas, and we are not forced to an either-or formulation. It seems safe, however, to rule out the central areas of the brain and the temporal lobes. Abscesses in the central regions are most likely to produce sensory and/or motor paralyses, whereas those in the temporal lobes are likely to produce quadrantal hemianopsia. Thus we should not be on safe ground in excluding the possibility of a lesion in the temporal lobe.

It now remains for us to ask ourselves whether we need to consider some other pathologic processes besides pyogenic abscess of the brain. I have already mentioned the rather remote possibility of mycotic lesions such as blastomycosis and coccidiomycosis, but we might also think of quasi-neoplastic processes such as Boeck's sarcoidosis. The spinal-fluid examination seems to support none of these, but they were not specifically looked for, and no one has said specifically that they weren't

there. Thus, we must reserve judgment as to the possibility of their presence.

In sum, I am prepared to pin my diagnosis on the following: brain abscess, single or multiple, involving the frontal and/or parietal lobes, with some evidence of meningitis to account for the pleocytosis of the spinal fluid. The pyogenic organisms may very well have been attenuated, thus making possible a relatively subacute or chronic condition. Pyogenic abscesses may prove to be sterile even on culture and smear.

Dr. Carl Gillies, Radiology: The films of the chest demonstrated a small area of consolidation at the right apex posteriorly, with breakdown and a fluid level. Further study by means of laminograms showed that the walls of the cavity were thick and dense, but that there was an area of breakdown at the center of the lesion. This appearance could indicate either a neoplasm with secondary breakdown or an inflammatory consolidation with secondary breakdown. In this instance, we were unable to say which explanation is the more likely one. The process could have either inflammatory or neoplastic, or both.

Dr. Paul E. Huston, Psychiatry: Dr. Meyers has made a brilliant analysis of this case. However, from the patient's history I should not ordinarily have thought of schizophrenia. Instead, the group of symptoms that this patient exhibited would almost automatically make me think of some type of deteriorating brain disease.

The schizophrenic patient doesn't ordinarily do all of the things that this patient did, although occasionally he might. Singly, there isn't any one of this man's symptoms that one could regard as an impossible manifestation of schizophrenia, but taken together, they do not make up the complex of that disease. On the one hand to become progressively frustrated as regards normal sexual relations, and on the other hand to engage in a socially unacceptable form of sex play nightly and at meals cannot be regarded as exactly a schizophrenic form of behavior. The gluttonous eating, the staring and the rigid posture can, of course, occur in schizophrenia, but these are likely to be transitory occurrences, rather than characteristic traits. The patient would need also to have many other symptoms, such as disturbances in thinking and affect, if his ailment were to be diagnosed as schizophrenia. Queer behavior, alone, is not enough.

On the basis of the historical material covering the period before the patient's hospitalization, I should rather have said that he had some type of deteriorating brain disease. I've seen patients with paresis, for instance, who behaved in such a fashion. Paresis can be a long, drawn-out picture, though of course I am not saying that he had paresis. After the acute illness began, he appears to have had brain involvement.

Dr. Edward E. Mason, Surgery: Do you think that the autopsy must have shown some changes in the brain?

Dr. Huston: Yes, I do.

Dr. Meyers: It seems to me that nothing in the story compels us to anticipate the disclosure of a diffuse degenerative or disseminated disease of the nervous system. Of course, one can think of the traditional form of general paresis (lues) as a "degenerative disease."

I should be inclined, rather, to categorize this case as a parasitic inflammatory process, but I wish to make it clear that I do not believe it was a general paresis. Therefore, when the pathologist reports his findings, I shall not be surprised to learn that nothing other than metastatic abscess and/or tumor has been disclosed in the brain.

Dr. Huston indicated that he did not think the patient had schizophrenia, but of course we are bound to recognize that his concept of that disease must necessarily be somewhat individual. As you know, there is no common agreement among psychiatrists as to the limits of the picture of schizophrenia. In fact, I've been trying for many years to establish them on the basis of what various ones of my psychiatrist friends have told me they mean when they use the term, but I must confess that I have had little success.

Dr. Huston has said that from his standpoint the patient would have had to exhibit many additional symptoms to justify his diagnosing the case as schizophrenia. In this regard, I should like to comment that the findings for which Dr. Huston was looking may simply have been left out of the protocol. Their having been omitted should not be taken as proof that they were absent, for manifestly the protocol was drawn up by persons not particularly skilled in looking for psychiatric aberrations.

Dr. Mason: Dr. Meyers, do you think that you have fairly completely ruled out the possibility of tuberculosis?

Dr. Meyers: Fairly completely, yes.

Dr. Mason: And could this patient have had brucellosis?

Dr. Meyers: I should think that to be a very good possibility.

Dr. Mason: Do you think tuberculosis a possibility?

Dr. Meyers: Yes, I think it's a possibility, but I should put it far down on the list.

Dr. Mason: I mentioned these two diseases because they were considered by the physicians who saw this patient.

Student: How would you account for the fact that the majority of the cells in the spinal fluid were lymphocytes?

Dr. Meyers: As I understand it, you are asking an explanation for the predominance of lymphocytes in the spinal fluid in the presence of a pyogenic infection such as I have postulated. My answer is that in the presence of chronic infections, such as a brain abscess, lymphocytes are

to be expected. If the bacterium producing meningitis and/or meningo-encephalitis is less than overwhelming in its virulence, the walling-off processes of the brain circumscribe and throw a capsule around what will become an abscess. Under these conditions, there is a strong propensity for the organism to become attenuated by the body, and thus to give rise to all of the low-grade effects that turn an acute process into a chronic one. Just as polymorphonuclear cells are most likely to attend acute processes, lymphocytic pleocytosis is most likely to accompany chronic processes. I am not prepared to say precisely why this should be. I can say only that we are familiar with the phenomenon. Six weeks is certainly ample time for an acute and relatively diffuse process to become encapsulated and take on chronic characteristics.

Dr. Mason: Dr. Meyers, you say you think this patient had a brain abscess. I wonder if you'd say how you think the brain abscess killed him. All patients with brain abscesses don't die.

Dr. Meyers: Brain abscesses are likely to kill individuals by either of two mechanisms. The first and perhaps the commoner mechanism is one which brain abscesses share with all other space-taking lesions. As the abscess increases in size and possibly sprouts daughter abscesses which call for new inflammatory processes and the establishment of new capsules, the cerebral hemispheres swell and produce a shifting of the brain stem across the midline. The crus of the brain stem may thus be compressed against the sharp edges of the tentorium of the cerebellum. At the region of compression, serious impairment of circulation in the pretectal and midbrain regions may result, and it may lead to ischemia of cardiovascular and respiratory neural mechanisms. Death can ensue. In the autopsy specimen, if this is the correct interpretation of the present case, the pathologists should have found a tentorial cone involving the hippocampal and uncal regions of the brain.

A second mechanism which leads to death is that in which the abscess breaks through the ependyma of the ventricular system, extravasating its contents along the ventricular system in such a way as to compromise the hypothalamic and medullary mechanisms that are necessary for the maintenance of life.

Dr. George E. Perret, Neurosurgery: I should like Dr. Meyers to tell us whether we could be dealing with something more diffuse, though exhibiting the same signs and symptoms—possibly encephalitis.

Dr. Meyers: If the evidence had indicated that we were dealing simply with a disturbance of the nervous system, I would go along with that possibility. But if we attempt to correlate the neurologic picture with the findings in the lung, I think a diagnosis of virus-produced encephalitis is very unlikely. We must not forget that what is called cerebritis—the early, formative period of a brain abscess—may also be justifiably called encephalitis. Because I have been impressed by the report of a lung lesion, I am inclined to think in terms of a metastatic infectious process, rather than a virus encephalitis.

Dr. Perret: I didn't mean a virus disorder, but I thought there was some evidence of a process that might have been characterized by central softening, but did not produce pus.

Dr. Meyers: That is what I referred to a few moments ago when I used the term *cerebritis.* I used it to cover the necrotizing and infectious process *before* the encapsulation warrants our employing the term *brain abscess.* We certainly would have to admit that the abscess(es) might be found in any of several stages of development, from the earliest (cerebritis or encephalitis) right on up to firm encapsulation. The pleocytosis of the spinal fluid which revealed many lymphocytes, it seems to me, supports the idea that the body at large, including the brain, was beginning to control the infection and, presumably, to throw a capsule around the abscess or abscesses. I should be inclined to think that if the patient were still in the stage of cerebritis due to a pyogenic organism that was destined to produce a full-blown abscess, the pleocytosis would have been polymorphonuclear.

Dr. Emory D. Warner, Pathology: The essential findings in this case were those of infection involving the lung and the central nervous system. There was an abscess in the upper lobe of the right lung. The state of scar-tissue development in the abscess wall fitted rather well with the history indicating pulmonary infection of approximately six weeks' duration.

There was a large brain abscess, approximately 6 cm. in diameter, involving both frontal and parietal lobes on the right. There was a beginning of collagen formation in the granulation tissue forming the wall of the brain abscess, but there was no dense scarring. This lesion appeared to be two or three weeks old, and definitely was of more recent origin than the lung abscess.

The bacterial flora in the two abscesses were identical. There were alpha hemolytic Streptococci, Escherichia coli, paracolon bacilli and Pseudomonas aeruginosae in both the lung abscess and the brain abscess.

The brain abscess had ruptured into the anterior horn of the right lateral ventricle, and we found purulent ventriculitis and leptomeningitis. If a pleocytosis had been performed at autopsy, I am sure that the spinal fluid would have been found to contain more neutrophils than were present at the time of the patient's admission examination.

The other findings in the case were essentially those of toxemia and terminal collapse: generalized visceral congestion, petechial hemorrhages of the serous surfaces, patchy and recent lobular pneumonia and bronchitis.

Dr. Perret: Did the patient have any cerebral atrophy?

Dr. Warner: The brain weighed 1,780 Gm. It was edematous, and the convolutions were flattened. Atrophy was not evident.

Dr. Meyers: Did he have a temporal cone?

Dr. Warner: A temporal cone is not specifically mentioned in the protocol, but I suspect that he did, since the brain was conspicuously swollen.

In a slide that we made of the brain abscess, there was necrotic tissue forming the lining of the abscess cavity. Beneath it was a layer of granulation tissue, and beyond the granulation tissue there was softened brain. A second slide showed exudate in the lateral ventricle, and a third showed dense collagenous connective tissue in the wall of the lung abscess.

In general, injury to the central nervous system results in gliosis, rather than in collagenous scarring. The type of injury and whether or not the meninges are involved determine whether or not granulation tissue is formed, with subsequent fibrosis. Even in the depths of the brain, there is some connective tissue along with the vessels, and following the right type of injury, granulation tissue does develop. A pyogenic infection is the right type of injury.

A slide of brain tissue outside the granulation-tissue wall showed the spread of cellulitis in the perivascular spaces and showed vacuolization, loss of neurones and foci of actual infection. Although there was a fairly well-developed granulation-tissue wall, the infectious process not only had perforated into the ventricular system, but was spreading in the brain tissue. Probably it would have produced daughter abscesses.

In a slide of meninges, the subarachnoid space was filled with purulent exudate. Associated with the sepsis, there was a fairly extensive myocarditis. In scattered foci, there were actual necrosis and a beginning degeneration of myocardial fibers. There was a diffuse infiltration of lymphocytes, large mononuclears and a few granulocytes. This type of lesion can have resulted either from toxic or local bacterial infection. The blood culture, incidentally, was negative in this case. Grossly, the heart was not dilated, nor was it appreciably flabby. I doubt that the myocarditis had very much to do with the patient's terminal course.

From the standpoint of postmortem findings, this was a case of pulmonary infection, with abscess formation and secondary brain abscess. The brain abscess eventually perforated into the ventricular system and caused diffuse ventriculitis and diffuse pyogenic leptomeningitis. There were no anatomic findings other than those which we might have expected if this patient had been entirely well up to the time of his pulmonary infection. Thus, we have no finding to explain the long history of aberrant behavior.

Regarding the brain abscess, there is one point that I should like to stress. As in this case, it very frequently happens that abscesses are found nowhere else in the body, despite the fact that the patient has died of a brain abscess metastatic from a lung abscess. It has been postulated that there must be something peculiar about localization in the brain. With lung abscess, thrombophlebitis of pulmonary veins is to be expected, with emboli entering the arterial side of the capillary bed to supply infected embolic material to the brain. But why not to the spleen, to the kidneys and elsewhere, if it gets into the arterial side? Such generalized distribution of embolic abscesses is typically encountered in bacterial endocarditis. It has been postulated that there may be anastomoses between pulmonary vessels and the veins of Baton. With the coughing incident to pulmonary infection, the high intrathoracic pressure could promote venous embolism through this system.

Dr. Mason: Do you have any explanation for the lymphocytes in the spinal fluid?

Dr. Warner: The brain abscess was two or three weeks old, and the rupture into the ventricular system had occurred recently. At the time of the patient's admission, the meninges were probably being irritated by a deep-seated abscess, rather than massively contaminated by pyogenic bacteria. Following rupture, there was purulent meningitis and ventriculitis.

Dr. Mason: But this abscess didn't start out with lymphocytes.

Dr. Warner: No, but it started in the substance of the brain. It started as an area of cerebritis, as Dr. Meyers has called it, with brain necrosis, tissue breakdown and abscess formation, followed by the development of a granulation-tissue wall. Toxic substances from this process produced lymphocytosis, as seen in the spinal fluid at the time of admission. At the time of death, I should guess that the spinal fluid did contain numerous neutrophilic granulocytes.

Dr. Jack M. Layton, Pathology: There may be another explanation. The organisms which were cultivated were those which do best in an acid environment. Mononuclear cells and lymphocytes predominate in an acid environment, whereas polymorphonuclears live best in an alkaline environment. The type of cell response depends upon the stimulus that evokes it, and with organisms like this, one would expect to find lymphocytes and mononuclears.

SUMMARY OF NECROPSY FINDINGS

Dr. Warner: The significant anatomic findings were those of infection, involving primarily the lungs and the central nervous system. There was a large abscess in the upper lobe of the right lung. The state of scar-tissue development in the abscess wall would correlate well with a history of pulmonary infection starting six weeks prior to death. A large brain abscess involving the right frontoparietal lobes had ruptured into the ventricular system, and there was acute ventriculitis and

meningitis. The development of granulation tissue in the wall of the brain abscess would indicate a duration of several weeks. Apparently, the brain abscess had formed more recently than the lung abscess.

There was rather extensive myocarditis of the type seen in cases of sepsis, and patchy acute pneumonia and bronchitis were present at the time of death.

Other findings—such as generalized visceral congestion, depression of spermatogenesis, satellitosis in the brain, and petechial hemorrhages of serous membranes—were non-specific, and would correlate with sepsis and terminal collapse. No anatomic changes were found which would appear to correlate with the long-standing mental symptoms.

NECROPSY DIAGNOSES

Lung abscess, right upper lobe, mixed infection

Brain abscess, right frontal and parietal lobes, with intraventricular rupture and diffuse leptomeningitis

Patchy, acute pneumonia

Myocarditis, acute

Congestion of viscera, generalized.

Coming Meetings

In State

Mar. 12	**Rural Health Conference Sponsored by the Iowa State Medical Society.** Memorial Union, Iowa State College, Ames
Apr. 4	**Iowa-Nebraska Medical Assembly.** Hotel Chieftain, Council Bluffs
Apr. 10-11	**Joint Annual Meeting, Iowa T-B & Health Association, Iowa Trudeau Society and Iowa Public Health Association.** Hotel Savery, Des Moines
Apr. 17	**Neurology.** SUI, Iowa City
Apr. 27-28	**Annual Meeting, Blank Memorial Hospital Association.** Raymond Blank Memorial Hospital, Des Moines
Apr. 28-May 1	**Annual Meeting, Iowa State Medical Society.** Veterans Memorial Auditorium, Des Moines

Out of State

Mar. 1-2	**Safety Practices in the Operating Room.** New York University
Mar. 1-2	**Anesthesiology.** New York University
Mar. 1-22	**Diagnosis & Treatment of Pain Syndromes by Regional Block.** U. of Penna., Philadelphia
Mar. 1-29	**In-residence Training in Cardiovascular Diseases.** K. U. Medical Center, Kansas City, Kansas
Mar. 2	**Symposium on Cerebral Palsy.** U. of California, San Francisco
Mar. 4-5	**Varicose Veins.** Cook County Graduate School of Medicine, Chicago
Mar. 4-5	**Ophthalmology.** Ohio State University, Columbus
Mar. 4-6	**Internal Medicine for Internists.** U. of Minn. Center for Continuation Study, Minneapolis
Mar. 4-6	**Basic Electrocardiography.** Indiana University, Indianapolis
Mar. 4-6	**U. of Texas Postgrad. Cong. on Medicine & Surgery.** Scott & White Clinic Hospitals, Temple, Texas
Mar. 4-8	**Surgical Forum, Los Angeles County Hospital.** Ambassador Hotel, Los Angeles
Mar. 4-8	**U. of California Course for G-P's.** Mt. Zion Hospital, San Francisco
Mar. 4-8	**Surgery of Colon and Rectum.** Cook County Graduate School of Medicine, Chicago
Mar. 4-8	**Review of Clinical Pediatrics.** New York University
Mar. 4-8	**Vaginal Approach to Pelvic Surgery.** Cook County Graduate School of Medicine, Chicago
Mar. 4-14	**Mediclinics of Minnesota.** Ft. Lauderdale, Florida
Mar. 4-15	**Surgical Anatomy & Clinical Surgery.** Cook County Graduate School of Medicine, Chicago
Mar. 4-15	**Motor Anomalies of the Eye (for Specialists).** New York University
Mar. 4-15	**Radiologic Diagnosis of Gastrointestinal Lesions.** Mt. Sinai Hospital, New York City
Mar. 4-15	**Cystoscopy.** Cook County Graduate School of Medicine, Chicago
Mar. 4-22	**Cerebral Palsy.** Columbia-Presbyterian Medical Center, New York City
Mar. 5-8	**Annual Meeting, Chicago Medical Society.** Palmer House, Chicago
Mar. 5-8	**Maintaining Emotional Health.** Menninger Foundation, Topeka
Mar. 6	**Dentistry & Medicine.** K. U. Medical Center, Kansas City, Kansas
Mar. 6	**Office Procedures of the Generalist** (Michigan A.G.P.). Olds Hotel, Lansing
Mar. 6-7	**Obstetrics.** University of Buffalo
Mar. 7-9	**U. of Texas Cancer Symposium.** M. D. Anderson Hospital, Houston
Mar. 7-9	**Office Gynecology.** Tufts College of Medicine, Boston
Mar. 7-9	**AMA Rural Health Conference.** Louisville
Mar. 7-9	**Joint Meeting, Dist. VI, American College of Obst. & Gynec. and the State Obst. & Gynec. Societies of Iowa, Minnesota, Wisconsin and Illinois.** Hotel Schroeder, Milwaukee.
Mar. 8-9	**Sterility.** University of California at Los Angeles
Mar. 8-9	**Renal Disease.** U. of Nebraska College of Medicine, Omaha
Mar. 10-14	**Alumni Postgraduate Convention, College of Medical Evangelists.** Biltmore Hotel, Los Angeles
Mar. 11-13	**Pediatrics.** K. U. Medical Center, Kansas City, Kansas
Mar. 11-13	**Calcium & Phosphorus Metabolism.** University of Pennsylvania, Philadelphia
Mar. 11-14	**New Orleans Graduate Medical Assembly.** Municipal Auditorium, New Orleans
Mar. 11-15	**Cardiology & Electrocardiography.** U. of California, San Francisco
Mar. 11-15	**Psychiatry in Occupational Health.** U. of Cincinnati Institute of Industrial Health
Mar. 11-22	**Surgical Anatomy & Clinical Surgery.** Cook County Graduate School of Medicine, Chicago
Mar. 11-22	**Fractures & Traumatic Surgery.** Cook County Graduate School of Medicine, Chicago
Mar. 11-22	**Electrocardiography & Heart Disease.** Cook County Graduate School of Medicine, Chicago
Mar. 11-23	**Gynecology, Course II.** Cook County Graduate School of Medicine, Chicago
Mar. 13	**Fractures.** Indiana University, Indianapolis
Mar. 13-15	**Fractures.** Brooke Army Medical Center, San Antonio
Mar. 14	**Upper Gastrointestinal Bleeding.** U. of Indiana, Indianapolis
Mar. 15	**Immunization.** Academy of Medicine of Cleveland and Cuyahoga County
Mar. 15	**AMA Symposium on Fats in Human Nutrition.** New Orleans
Mar. 15-16	**Symposium on Emphysema.** Highland-Alameda County Hospital, Oakland
Mar. 17	**Regional Meeting, Am. College of Gastroenterology.** Hotel Pantlind, Grand Rapids
Mar. 17-19	**Allergy (American College of Allergists).** Palmer House, Chicago
Mar. 18-20	**Sectional Meeting, American College of Surgeons.** Washington, D. C.
Mar. 18-20	**Pediatrics for G-P's.** U. of Minn. Center for Continuation Study, Minneapolis
Mar. 18-20	**Ophthalmology.** Walter Reed Army Medical Center, Washington, D. C.

Mar. 18-20	**Physiologic Aspects of Anesthesia.** U. of Penna., Philadelphia
Mar. 18-21	**Clinical Applications of Electrocardiography.** K. U. Medical Center, Kansas City, Kansas
Mar. 18-22	**Internal Medicine (American College of Physicians).** Emory University, Atlanta
Mar. 18-22	**Clinical Bronchoscopy.** Cook County Graduate School of Medicine, Chicago
Mar. 18-22	**Electrocardiography.** New York University
Mar. 18-22	**Diseases of the Heart.** University of Michigan, Ann Arbor
Mar. 18-22	**Electrocardiography.** New York University, NYC
Mar. 18-23	**Surgery of the Hand.** New York University
Mar. 18-23	**Medical Technology.** U. of Colorado Medical Center, Denver
Mar. 18-26	**Radiology of the Chest.** Mt. Sinai Hospital, New York City
Mar. 18-29	**Cystoscopy.** Cook County Graduate School of Medicine, Chicago
Mar. 18-29	**Gastroscopy.** Cook County Graduate School of Medicine, Chicago
Mar. 18-29	**Serology of Syphilis.** V-D Research Laboratories, Chamblee, Ga.
Mar. 18-30	**Gastroscopy & Gastroenterology.** Cook County Graduate School of Medicine, Chicago
Mar. 18-Apr. 5	**Mobilization of the Stapes.** Mt. Sinai Hospital, New York City
Mar. 19-22	**Postgraduate Institute, Philadelphia Clinical Medicine Society.** Bellevue-Stratford Hotel, Philadelphia
Mar. 20	**Chicago Heart Association.** Sheraton Hotel, Chicago
Mar. 20-21	**Psychosomatic Aspects of Obstetrics & Gynecology.** Bunts Institute, Cleveland
Mar. 21-23	**Obstetrics for Specialists.** U. of Minn. Center for Continuation Study, Minneapolis
Mar. 21-23	**Pediatrics.** Tufts College of Medicine, Boston
Mar. 22-24	**Diseases of the Liver & Biliary Tract (U. of Southern California).** Hotel Statler and Los Angeles County Hospital, Los Angeles
Mar. 23	**U. of California Symposium on Newborn.** Children's Hospital, San Francisco.
Mar. 25-27	**Hematology.** K. U. Medical Center, Kansas City, Kansas
Mar. 25-27	**Refresher Course in Allergic Conditions.** New York University
Mar. 25-27	**Sectional Meeting, American College of Surgeons.** Toronto, Ontario
Mar. 25-28	**AAGP Annual Scientific Assembly.** Kiel Auditorium, St. Louis
Mar. 25-29	**Industrial Health for RN's.** University of Cincinnati
Mar. 25-29	**Measurement of Pulmonary Function in Health & Disease.** Boston City Hospital.
Mar. 25-29	**Ophthalmic Pathology.** Walter Reed Army Medical Center, Washington, D. C.
Mar. 25-29	**Pathology & Pathologic Physiology in Internal Medicine (American College of Physicians),** Cleveland Clinic, Cleveland
Mar. 25-29	**Endotracheal and Related Anesthesias.** New York University
Mar. 25-30	**Surgery of the Eye.** New York University
Mar. 25-30	**Electrocardiographic Diagnosis.** University of Michigan, Ann Arbor
Mar. 25-Apr. 5	**Surgical Technic, Course I.** Cook County Graduate School of Medicine, Chicago
Mar. 25-Apr. 5	**Obstetrics, Course I.** Cook County Graduate School of Medicine, Chicago
Mar. 25-Apr. 6	**Clinical & Anatomic Otorhinolaryngology.** U. of Indiana, Indianapolis
Mar. 26-31	**Audiology.** Northwestern University College of Medicine, Chicago
Mar. 27-28	**Postgraduate Course, Oregon Academy of Ophthalmology & Otolaryngology.** U. of Oregon Medical School, Portland
Mar. 28-30	**Metabolic & Endocrine Diseases.** U. of California, San Francisco
Mar. 28-30	**Joint Meeting, Calif. TB & Health Assn. and Calif. Trudeau Society.** Statler Hotel, Los Angeles
Apr. 1-2	**Regional Meeting, International College of Surgeons.** Santa Barbara
Apr. 1-2	**Pediatrics Seminar.** Univ. of Nebraska College of Medicine, Omaha
Apr. 1-3	**Surgery in Acute Trauma.** Valley Forge Army Hospital, Phoenixville, Penna.; Tripler Army Hospital, Honolulu; Fitzsimons Army Hospital, Denver; Madigan Army Hospital, Tacoma; Letterman Army Hospital, San Francisco; Army Hospital, Ft. Bliss, Texas; Walter Reed Army Medical Center, Washington, D. C.
Apr. 1-3	**Clinical Reviews, Mayo Clinic and Mayo Foundation.** Rochester, Minn.
Apr. 1-3	**American Academy of Pediatrics.** Washington, D. C.
Apr. 1-5	**Surgery of the Colon and Rectum.** Cook County Graduate School of Medicine, Chicago
Apr. 1-5	**Ophthalmic Plastic Surgery.** New York University, NYC
Apr. 1-5	**Radioactive Iodine, Course I.** Cook County Graduate School of Medicine, Chicago
Apr. 1-5	**Evaluation of Industrial Environment.** Institute of Industrial Health, Cincinnati
Apr. 1-5	**Neurology.** Mt. Sinai Hospital, NYC
Apr. 1-5	**Metabolism & Endocrinology.** University of Michigan, Ann Arbor
Apr. 1-5	**Management of Mass Casualties.** Ft. Sam Houston, Texas
Apr. 1-5	**Gastroenterology (American College of Physicians).** Boston Univ.
Apr. 1-5	**Basic & Clinical Allergy.** Montefiore Hospital, Pittsburgh
Apr. 1-5	**Postgraduate Course (American College of Physicians).** Bellevue Stratford Hotel, Philadelphia
Apr. 1-6	**30th Annual Spring Congress. Gill Memorial Eye, Ear, Nose & Throat Clinic.** Roanoke
Apr. 1-6	**Physical & Occupational Therapy in Polio.** Warm Springs Foundation
Apr. 1-12	**Pediatric Cardiology.** New York University, NYC
Apr. 1-12	**Urologic Pathology.** New York Polyclinic Med. Sch. & Hosp., NYC
Apr. 1-12	**Gynecologic & Obstetric Pathology.** New York Polyclinic Med. Sch. & Hosp., NYC
Apr. 1-12	**Environmental Radiation Sanitation.** Taft Sanitary Engineering Ctr., Cincinnati
Apr. 1-12	**Radioactive Iodine.** Cook County Graduate School of Medicine, Chicago
Apr. 1-12	**Urology.** Cook County Graduate School of Medicine, Chicago
Apr. 1-12	**Cystoscopy.** Cook County Graduate School of Medicine, Chicago
Apr. 1-19	**Diagnosis & Treatment of Pain by Regional Block.** U. of Penna., Phila.
Apr. 1-26	**Refraction.** New York Polyclinic Med. Sch. & Hosp., NYC
Apr. 1-26	**Clinical Surgery.** New York Polyclinic Med. Sch. & Hosp., NYC
Apr. 1-26	**Clinical & Operative (Cadaver) Surgery.** New York Polyclinic Med. Sch. & Hosp., NYC
Apr. 1-26	**Clinical and Office Obstetrics.** New York Polyclinic Med. Sch. & Hosp., NYC
Apr. 1-26 or Apr. 1-May 10	**Clinical Proctology.** New York Polyclinic Med. Sch. & Hosp., NYC
Apr. 1-27	**Clinical Gastroenterology.** New York Polyclinic Med. Sch. & Hosp., NYC
Apr. 1-30	**Residence Training in Pulmonary Diseases.** Univ. of Kansas Med. Ctr., Kansas City, Kans.
Apr. 1-30	**Clinical Obstetrics (Harvard University).** Boston Lying-In Hospital
Apr. 1-May 3	**Course for GP's.** New York Polyclinic Med. Sch. & Hosp., NYC
Apr. 1-May 10	**Proctology and Gastroenterolgy, With Operative Proctology (Cadaver).** New York Polyclinic Med. Sch. & Hosp., NYC
Apr. 1-May 11	**Clinical Gynecology.** New York Polyclinic Med. Sch. & Hosp., NYC
Apr. 3-5	**Second Inter-American Medical Convention.** Hotel El Panama, Panama City, C. Z.
Apr. 3-5	**Fifth Annual Spring Postgraduate Assembly.** U. of Nebraska College of Medicine, Omaha
Apr. 4-5	**Medicine.** Tulane University College of Medicine, New Orleans
Apr. 4-6	**Hematology.** Tufts University College of Medicine, Boston
Apr. 5	**Psychiatry & Neurology.** Medical College of South Carolina, Charleston
Apr. 6	**Trauma for GP's.** U. of Minnesota Center for Continuation Study, Minneapolis
Apr. 7-10	**Pan American Association of Ophthalmology.** Hotel Statler, NYC
Apr. 8-9	**Regional Meeting, International College of Surgeons.** Las Vegas
Apr. 8-9	**Auscultation of the Heart.** U. of Kansas Med. Ctr., Kansas City, Kans.
Apr. 8-10	**Radiology for GP's.** U. of Minnesota Ctr. for Continuation Study, Minneapolis
Apr. 8-10	**Gallbladder Surgery.** Cook County Graduate School of Medicine, Chicago

(Continued on page xlvi)



THE 1957 ANNUAL MEETING

The program for the 1957 Annual Meeting of the Iowa State Medical Society, which is printed in full in this issue of the JOURNAL, is one that we feel all physicians will find highly attractive. The out-of-state speakers are nationally prominent and highly respected men, there are an extraordinarily large number of Iowa men scheduled to speak, and five or six panel discussions have been scheduled, at each of which several authorities will offer their views on the various facets of a single problem. Members of the Society who do not plan to drive back and forth to Des Moines between sessions should arrange for their hotel accommodations immediately.

Dr. Arthur T. Hertig, of Boston, will deliver the Erskine Memorial Lecture at the general session Tuesday morning, April 30, on "Carcinoma in Situ of the Cervix Uteri." Dr. Hertig is Shattuck professor of pathology at the Harvard University medical school, and consulting pathologist at the Boston Lying-in Hospital and at the Free Hospital for Women, in Boston. He will present evidence indicating the probability that the presence of morphologically malignant but noninvasive squamous epithelium on the surface and/or in the glands of the cervix should be regarded as the forerunner of invasive carcinoma.

The general session on Wednesday morning, May 1, will be especially interesting, for the program is to consist of several short talks, most of them by Iowans, on abdominal pain as specialists of various sorts evaluate and treat it. The speakers will be Dr. H. W. Rathe, Waterloo, an internist; Dr. S. E. Ziffren, S.U.I., a surgeon; Dr. W. F. Mengert, Chicago, a gynecologist; and Dr. P. M. Kersten, Fort Dodge, a psychiatrist. The culmination of the Wednesday morning program will be Dr. Fred Sternagel's address as president-elect and his installation as president of the Iowa State Medical Society.

At the meeting of the Medical Section on Monday afternoon, April 29, more than half of the program will be devoted to a symposium on chest diseases in farmers, in which the participants are to be Dr. Kenneth R. Kingsbury, of Ottumwa, and Drs. R. D. Eckhardt, Richard Tjalma (D.V.M.), R. E. Hodges and Paul M. Seebohm, of Iowa City. At the meeting of the Section on Medical Economics—a new feature this year—the speakers will be Mr. R. J. Pritchard, Council Bluffs, a clinic administrator; Dr. James E. Kelsey, Des Moines, who will speak on New York City's HIP; Mr. W. A. Richardson, Oradell, New Jersey, editor of MEDICAL ECONOMICS; Mr. W. D. Severin, Waterloo, a newspaper reporter; Mr. N. T. Robinson, Des Moines, a banker who specializes in trust arrangements; and Mr. Philip H. Cless, Des Moines, who has served as attorney for the ISMS.

We have singled out these few items for mention chiefly because they are new and different. Actually, the whole 2½-day scientific program is so crowded with interesting lectures and discussions that doctors will deeply regret the fact that some of them must be simultaneous with others. With a single exception, each of the out-of-state speakers is to make two appearances, once at a general session and once at a section meeting. That exception is Dr. William P. Shepard, of New York City, a second vice-president of the Metropolitan Life Insurance Company, who will address the annual banquet on Tuesday evening. Since his announced topic, "New Demands on Iowa Physicians," is an extremely broad one, he has left himself room to range far afield, but Dr. Wendell Downing, president of the Society, knows him well and is sure that whatever he chooses to say will be significant, and Dr. Carl Lohmann, who heard him at a recent AMA conference on industrial health, has spoken enthusiastically of him.

The scientific exhibits at this year's annual meeting represent the work of a larger number of medical investigators than did last year's, and will be worth as much time as physicians can find to devote to them.

We should like, especially, if we may, to urge that all doctors who attend the annual meeting reserve time to make the rounds of the technical exhibitors' booths. There are a number of excellent reasons for their doing so. First and foremost, it is the technical exhibitors who pay the bills for the annual meetings of our Society, year after year. A sizable registration fee would be required if it were necessary for us to chip in to pay rental on the Des Moines auditorium and all of the incidental—but by no means inconsiderable—incidental expenses.

The exhibitors rent booths at our annual meeting in the hope that we will stop to talk with them. But too few of us have been doing so, at the last couple of meetings, and we can expect that there will be fewer exhibitors in the future if we don't do better this year. Let's reverse that trend. Recesses are provided in all of the scientific sessions specifically to encourage doctors to visit the booths. All of us will find it easy and pleasant to do so.

We should, be more than cordial to the representatives of firms manufacturing the products that we use or direct our patients to use; we should treat them as partners. The chief producers

of ethical pharmaceuticals have either performed or subsidized the research work that developed a major share of the medications that make modern medicine more efficacious than it was a few short years ago. They are spending money for further studies that promise direct benefits to us and to our patients. Furthermore, the representatives of the drug companies are our liaison with the pharmacists, for they work with us and with the druggists to put our choice of drugs where our patients can get them when (but only when) we say so. And it is they who can iron out misunderstandings regarding the prices that should be charged for those drugs.

Let's maintain our friendships with the detail men! Doing so will be worth our while.

OUR STATE SCHOOLS NEED MONEY

Throughout this winter, and especially since Governor Loveless presented his budget to the 57th General Assembly, all of us have been reading and hearing a great deal about the increases in appropriations that are being asked for the Board of Regents institutions—S.U.I., I.S.C., I.S.T.C., Iowa School for the Deaf, Iowa Braille and Sight Saving School, and the State Sanatorium. In a general way, we are all aware of the reasons for such increases, but since we compose a fairly large—and, let us hope, an influential—segment of the college graduates in Iowa, it is well for us to take a fairly close look at them. Thus, whenever we have an opportunity, we shall be prepared to explain them to our fellow citizens.

In past legislative years, The Board of Regents (or the State Board of Education, as it used to be called) has not been spectacularly successful in getting money for capital improvements. Here is the record:

Year	*Asked for purchase of land and construction of buildings at all Regents' institutions*	*Appropriated*
1925	$ 1,509,000	$1,488,000
1927	3,078,000	1,921,000
1929	3,197,592	1,176,000
1931	1,323,000	452,000
1933	115,000	
1935	2,025,000	373,500
1937	1,443,000	280,000
1939	1,170,000	255,000
1941	784,000	525,000
1943	150,000	
1945	10,315,000	6,500,000
1947	12,750,156	3,280,001
1949	32,988,257	2,892,213
1951	35,606,507	137,000
1953	9,801,085	4,949,338
1955	11,984,000	4,099,750
1957	16,251,085	

In his budget recommendations for 1957, Governor Loveless has cut the Regents' capital improvements figure to $9,960,390. That amount is, of course, by no means final. Rather, considerable effort will have to be expended to persuade the legislators against making further reductions.

Similarly, S.U.I. and its sister state institutions have been provided considerably less, in past years, than their administrators though necessary for teachers' salaries, with the result that pay scales at state schools here in Iowa are now considerably below the averages of those paid at the universities and colleges with which they must compete for faculty members. In consequence, valuable teachers are leaving Iowa to locate at those competing schools or, in some fields, to enter private enterprise, and Iowa is having extreme difficulty in hiring replacements for them.

The subject is far too large for complete presentation here. For that reason, we shall limit ourselves to a brief outline of the situation that is faced by S.U.I. and, in particular, by its College of Medicine. In the salaries that S.U.I. pays professors (average: $7,900) and associate professors (average: $6,350) outside its College of Medicine, it ranks tenth among Big Ten schools. Among nine medical schools in an eleven-state area, the S.U.I. College of Medicine ranks sixth in the salaries it pays to full professors (S.U.I. average: $9,741), eighth in the pay it gives associate professors (S.U.I. average: $7,628), sixth in the pay it gives assistant professors (S.U.I. average: $6,288) and eighth in the pay it gives instructors (S.U.I. average: $4,350).

The year 1957 is altogether correctly regarded as the eleventh hour for increasing appropriations for our state institutions of higher learning. Of course they need additional facilities for research, but even more urgently they need additional classroom space and more teachers. Certainly the teachers whom they now have should not be lost to competing institutions. Whereas in 1930 no more than 13 per cent of high school graduates entered college, 26.8 per cent entered college last year, and it is conservatively estimated that the figure will rise to 30 per cent during the next 12 or 13 years. No doctor needs be told that 30 per cent of the college-age population in 1970 will be a considerably larger number than 30 per cent of the youngsters who graduated from high school recently. Thus, S.U.I. and its College of Medicine must prepare for heavier enrollments.

In asking for $1,277,843 to pay for salary increases for S.U.I. teachers, the Regents' announced objective is to raise the University's pay scales to third place. Since salaries at the groups of schools with which the University at large and its College of Medicine compete are doubtless being raised, it is virtually certain that they will fall short of that goal, but probably not by a very great deal. To bring S.U.I. College of Medicine salaries up to what *was* third place in 1955-1956, the average full professor's salary will need to be raised from $9,741 to $12,480; the average associate professor's, from $7,628 to $9,741; the average assistant professor's, from $6,288 to

$7,574; and the average instructor's, from $4,350 to $5,568.

For the University as a whole, here are the salary increases for which the Board of Regents is asking:

College	Current Salaries Full-time staff*	Annual Cost of Increase	Number on Staff	Per Cent Increase
Liberal Arts	$1,603,527	$257,247	277	16.0
Commerce	179,440	19,190	29	10.7
Education	122,950	13,212	19	10.7
Engineering	180,784	27,428	30	15.3
Law	87,000	3,092	9	3.6
Medicine	944,790	243,329	120	25.8
Dentistry	254,033	76,607	31	30.2
Pharmacy	55,100	2,543	7	4.6
	$3,427,624	$642,648		
Staff members not included above	2,993,962	562,864		18.8
	$6,421,586	$1,205,512		
Retirement & Insurance Premium		72,331		
		$1,277,843		

* Limited to full time staff on either 9- or 12-month basis, whichever is predominant.

HUNGARIAN PHYSICIAN REFUGEES

In acknowledgement of their gift of $50 for the relief of the physicians among the refugees who have recently escaped from Hungary into Austria, the members of the Cerro Gordo County Medical Society have received the following letter from Dr. M. Arthur Kline, secretary, The American Medical Society, 11 Universitatstrasse, Vienna 1:

"With your permission, this money will be applied for direct aid to the now more than 500 refugee Hungarian doctors who are presently in Austria. Our refugee doctors' organization is composed of (1) Austrian Ärztekammer (Chamber of Physicians); (2) Vienna Society of Medicine; (3) American Medical Society of Vienna. The Refugee Committee selected by these bodies consists of Prof. Dr. Felix Mandl, professor of surgery at the University of Vienna; Prof. Dr. Leopold Schönbauer, rector emeritus of the University of Vienna; and Dr. M. Arthur Kline.

"We have, by experience, found that the best and most direct way to help our Hungarian colleagues is to accord them $20 upon arrival, $10 for every week they remain in Austria and $3 per day for board and lodging for those colleagues who have been designated to private quarters. We allot $1 per day for each additional member of the doctor's family.

"There are no organizational or administrative expenses deducted. Every penny received is utilized for direct aid for our refugee Hungarian colleagues.

"I am profoundly grateful for your kind humanitarian gesture, which I assure you will find full recognition in the practical assistance it provides for its needy beneficiaries."

The editors of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY should like to echo Dr. Kline's thanks to the members of the Cerro Gordo Society, and to suggest that other groups of physicians follow their example.

BLOOD LIPIDS

Now that arteriosclerosis is the King of Killers, it is only natural that we should grasp at any therapy that is said to benefit sufferers from this affliction. *Cholesterol* is currently the magic word, and articles purporting to demonstrate iatrogenic depression of blood cholesterol flood the literature.

It has been assumed because the atherosclerotic plaque contains cholesterol and because hypercholesterolemia is related to an increased incidence of atheroscerosis, that cholesterol *causes* atherosclerosis. Diets and medications have been used in attempts to lower the blood cholesterol, and almost every investigator claims to have been successful. Yet, after reading such reports over two or three decades, it is time for us to realize that little progress has been made. Thus, we should pause to reflect upon the nature of the difficulty.

In reading the current articles on blood lipids, one should keep the following facts in mind:

1. Cholesterol is a rather inert chemical substance, and it may be no more than incidentally present, just as is calcium in an arteriosclerotic plaque or in a Ghon tubercle.

2. The blood contains other fatty substances besides cholesterol, if we *must* incriminate fats. (a) Goffman has popularized the lipoproteins. (b) The phospholipids, lecithin, cephalin and sphingomyelin are *very* active chemical substances, and they exist in the blood stream in almost equal concentration with cholesterol. (c) Principally because of the difficulty in assaying them, the concentration of neutral fats in the blood is rarely mentioned.

3. Variations of 10 to 30 mg. per cent in fasting cholesterol are insignificant, and yet many articles brag about such reductions.

4. A definite therapeutic reduction in blood fats comes slowly—perhaps over a three-to six-month period. Articles describing short-term variations should be disregarded.

5. Many experimenters have provided for no controls. It seems to us that each patient should be his own control—i.e., an individual should be placed on therapy for anywhere from three to six months, and then taken off therapy for an equal period. This cycle should be repeated to assure the validity of the results. It is worthless to state that before therapy the blood-lipid level was mg. and that after therapy the level was lower by mg., for such a variation might have been happenstance.

It behooves us, therefore, to be highly critical

in scanning articles that purport to demonstrate variations in blood lipids, for experiments in altering blood lipids are laborious, time consuming, and fraught with many difficulties and natural variations.

RAW MATERIALS FOR PHARMACEUTICAL RESEARCH

Along with the general public, we hear constantly of the miracles that are coming *out of* pharmacy researchers' test tubes, but no more than infrequently are we told of what had been put *into* them.

So far as antibiotics are concerned, the raw materials come to the pharmaceutical laboratory from nearby and from the far corners of the world as half-handfuls of dirt. And because the strains and variants of the microorganisms to be found in the soil are quite inexhaustible, the lab men enlist all of the help they can get in gathering samples. Each dab is subjected to a series of tests that may last as long as three or four years. Each species of mold, bacterium and actinomycete is isolated, cultured and tested against various pathogenic bacteria in an effort to find out whether it kills or inhibits the growth of any of them, and if it does, to determine its relative efficiency in so doing.

Parke, Davis and Company has encouraged its detail men to collect soil samples and provides them plastic tubes or bags in which to mail them back to Detroit. The soil from which Chlormycetin was developed came from South America.

The Company asks its men, of course, to pinpoint the exact spots from whence they took their samples, and it is just possible that such information, in some instances, furnishes clues about where salesmen are spending their time. One sent a sample "from the fifth tee at the Washoe County Golf Course, in Reno," another said he got his from the flower garden at a Bermuda hotel, and a third said his came from the bank of "the left fork of Straight Creek, 14 miles from Pineville, Kentucky."

This unique type of mining will no doubt continue indefinitely, and the stream of new antibiotics that are coming onto the market testifies to its productivity.

Attend the Annual Meeting
of the
Iowa State Medical Society
Apr. 28-May 1
Veterans Memorial Auditorium
Des Moines

Letter to the Editor

Sir:

We are soon to be presented with a new set of Blue Shield plans involving a unit system and available full-service coverage for families with incomes up to $6,000 yearly. This creates a situation with several facets, only one of which is the certainty of direct payment to the doctor.

I am informed by the Blue Shield representative that 87 per cent of the families in Iowa have incomes of $6,000 or below. If the proposed full-service contract is accepted, the Blue Shield fee schedule will immediately become the fee schedule for the entire state. If we accept the Blue Shield scale for those who hold Blue Shield policies, we cannot, in all conscience, ask any different fees from those who have other insurance or have no insurance at all. The 13 per cent not included in this group will make very little difference in the ordinary practice. With such a schedule set before us and our charges thus dictated, we relinquish one more bit of independence in a world becoming more and more directed. It has always been our proud privilege to tailor our fees to meet individual circumstances and to decide for ourselves which of our patients deserve to be asked a reduced fee or even none at all. We have also been privileged, when circumstances are favorable, to charge a larger than average fee. The current proposal deprives us of this freedom of action. If a case is unduly complicated, we shall be permitted to send along a letter of explanation which the Board will consider, and perhaps the Board will grant a slight increase in the fee. I, for one, can contemplate such a hat-in-hand supplication only with despair.

I am informed by the Blue Shield representatives that such a plan as this full-service contract is a must, since the unions demand it. The unions do not seem to demand it from Aetna, Travelers, Occidental, or any of the other commercial carriers. If these carriers attempted to offer such full-service coverage, we, as physicians, would not permit it, for the insurance companies would have to hire doctors and establish clinics. We have just spent a rather considerable amount of money and effort to make this kind of medical practice impossible. Among health insurance plans, only Blue Shield, with its arrangement of participating physicians, can—in this state at least—offer full-service coverage without running afoul of the law which we ourselves so vigorously defend.

But even if all this were not true, does the mere fact that unions demand something constitute a sufficient reason for our surrendering forthwith? We are an old and proud profession, noted and respected for our service and independence of

thought and action. It dims the glow of that pride when we recognize that we and the service we render have already become pawns pushed back and forth across the bargaining table between labor and management. We are already a "fringe benefit" and are included with pensions, paid holidays and various other gains not included in the worker's pay envelope. Now we are informed that, to meet union demands, we are to restrict still further our freedom of action. It does not seem in keeping with our traditions of leadership that we should so promptly and abjectly surrender our responsibilities and privileges to the demands of labor unions.

This proposed full-service contract threatens to bring about still another harmful effect. It provides a sameness of compensation and encourages a sameness of performance. The surgeon who removes a small segment of bowel for cancer does an inadequate operation compared with the surgeon who does a wide excision of bowel and mesentery. Yet both operations are classified as bowel resections in the fee schedule and both surgeons receive the same compensation. The custom of medical practice has always conceded a higher fee for a given service when rendered by a specialist whose training, experience, thought and study have been concentrated within a limited field. This plan revokes such custom and removes the economic incentive to improve. Since the great bulk of his practice will be involved, this full-service plan will force the specialist to choose among three alternatives:

1. Maintain the *status quo* in everything but his income, which will inevitably decline
2. Enlarge the field of his professional activity into some areas for which he has had no special training, maintaining his economic status by increasing his volume
3. Maintain his freedom of action by withdrawing from Blue Shield.

At its inception, Blue Shield had a dual and laudable ambition. It wished to provide medical care for low-income families, thereby helping to counteract the demand for government medicine. "The Doctors' Plan" has so far departed from those original goals that it is now almost unrecognizable. It is a commercial enterprise whose object is to sell coverage to as many people as possible, differing from other commercial carriers only in its offer of full-service coverage. It is this full-service-coverage idea which promises such profound changes in the private practice of medicine. Contrary to usual statements, Blue Shield is *not* the only insurance plan which provides for direct payment to the physician. Some make the checks jointly payable, and others include assignments which they scrupulously honor when signed.

This proposed $6,000 plan was discussed only once at a meeting of the Scott County Medical Society, and the expressed sentiment was almost uniformly opposed to it. Yet, preparations proceed apace for its adoption, and from the tenor of the Blue Shield representative's remarks in my office recently, it was evident that only the formalities remain uncompleted. It would seem only fair that each county society be asked to discuss fully the implications of this proposal, and then express its sentiments by a vote for or against it. The sentiments of the various county societies could be tabulated and weighed in the State Society office—and considered more seriously than such opinions have been considered thus far. If Blue Shield is to function in a grass-roots manner, then the opinions of those who must carry it out are of supreme importance.

Full-service coverage for the low-income group, so as to provide good medical care for all, is understandable and laudable. Full-service coverage for 87 per cent of the people is something else again, something that smells strongly of the "Let me take you by the hand and take care of you because you are too weak and ignorant to take care of yourself" philosophy so dear to the hearts of the socializers.

Yours,

(signed) JAMES F. BISHOP, M.D.

Davenport, Iowa

JOINT ANNUAL MEETING OF FOUR HEALTH GROUPS

A joint annual meeting of the Iowa Trudeau Society, the Iowa Tuberculosis and Health Association, the Iowa Heart Association and the Iowa Public Health Association is to be held at the Savery Hotel, Des Moines, on April 10 and 11.

At the annual dinner, on the evening of the first day, the guest speaker is to be Edgar Allen, M.D., president of the American Heart Association.

The spring scientific session of the Iowa Trudeau Society will begin at 2:15 p.m. on Thursday, April 11. Paul Seebohm, M.D., of Iowa City, who is program chairman, says that the discussions will be of particular interest to physicians in general practice. One feature will be a conference to which physicians will be invited to present problem cases from their own practices.

IOWA METHODIST SYMPOSIUM

The fourth annual medical symposium sponsored by the internal medicine staff of Iowa Methodist Hospital is to be held at the Des Moines Art Center on Saturday, May 11. The program is being designed especially to interest specialists in internal medicine. A list of the speakers and their topics will appear in the April issue of the JOURNAL.

President's Page

EXPANDED COVERAGE FOR BLUE SHIELD

The idea of prepaying medical and surgical expenses is now one that the majority of people have come to accept, here in Iowa. Blue Shield, as a service plan, has set the standards for this type of coverage, but private insurance companies have also made great strides, in recent years, in providing adequate indemnity policies. After 11 years of existence, what is the Blue Shield program to be? If it is to provide full service only for the low income group, what should be the income limit? Should Blue Shield offer full service coverage at higher premiums for higher income groups? If so, at what levels? Is the answer to be found in full service with a "deductible," or deductible and co-insurance feature, with no fee schedule? These are the questions which now confront the members of the Iowa State Medical Society.

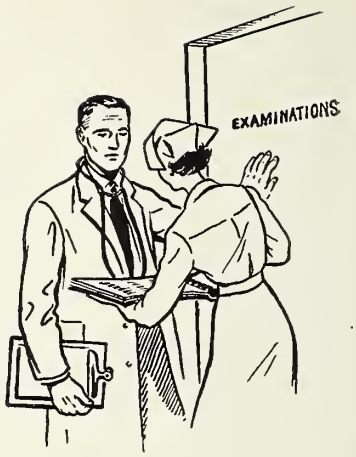
The House of Delegates, in April, 1956, requested the Blue Shield Board of Directors to make available a variety of full service policies with different income levels and a variety of policies with deductible or co-insurance bases. Coverage for office diagnostic services was included in the plans studied.

Close liaison has been established during the past year between the Executive Council of ISMS and the Blue Shield Board of Directors. Policy making is now a joint endeavor of the two groups. The various policies have now been formulated and are ready for presentation to the doctors of Iowa. As rapidly as possible, they will be submitted to the county societies, so that you may have an opportunity to study them. Neither the Executive Council nor the Blue Shield Board has any desire to force any particular policy on the members. However, if Blue Shield is to continue to exist, it must have actuarily sound products that can be sold to the public. If it is not to function, do we wish private companies to take over the entire prepayment program, thus assuming control of the basic economy of American Medicine—a control that has always been ours?

Between now and the April 28 meeting of the Iowa State Medical Society, we shall have to decide what course of action we wish to take. As individuals and as county societies, please study the various plans, and decide which you wish to adopt. Then, instruct your delegates to the ISMS House of Delegates and those of your members who will attend the annual meeting of Blue Shield participating physicians. The decision is yours to make. Let us choose with care; and then let us unite to see that our Blue Shield—whatever it is to be—is a success.

Wendell Downing, M. D.
President

THE DOCTOR'S BUSINESS



The Marital Deduction and Trust Arrangements

HOWARD D. BAKER
WATERLOO

Last month we discussed the pitfalls in joint ownership of property, pointing out that it may or may not be a means of reducing inheritance taxes, depending upon the size of the estate and upon a number of other factors. This month, we wish to speak of the marital deduction, to which we made incidental reference last time, and of another means of reducing death taxes, the trust.

MARITAL DEDUCTION

Several years ago, a law was passed that enables one to leave a maximum amount of his property for the benefit of his family. This law grants a deduction from the gross estate equal to the value of property passing to a spouse outright or with full power of appointment, but cannot exceed 50 per cent of the valuation of the estate.

In small estates, the savings effected by the marital deduction can be quite substantial. For example, let us say that Dr. Jones's estate is valued at $120,000. Through the marital deduction, his widow can be saved $9,340.

	Marital Deduction Used	*Marital Deduction Not Used*
Gross Estate	$120,000	$120,000
Specific Exemption	60,000	60,000
Net Estate	60,000	60,000
Less: Marital Deduction (One half of estate)	60,000	—
Amount subject to tax	—	60,000
Federal Estate Tax	—	$ 9,340

Beware of a tax trap on larger estates. Many men leave their entire estates to their wives outright. If the total estate amounts to over $120,000, they are thus unwittingly extravagant as regards taxes. Remember that the marital deduction is limited to one-half of your estate. If you leave your wife more, all property in excess of one-half your estate, less your specific exemption, will be subject to tax in both your estate and hers.

THE TRUST

By arranging your estate plan properly, you can protect an estate valued in excess of $120,000. The wisest plan is for one to leave his wife one-half of his estate outright, to qualify her for the maximum marital deduction, and put the other half into a trust so designed as to give his wife all of the benefits of its use. She can receive the income from the trust and can be paid principal amounts for support and medical care. On her death, the remainder of the trust will pass untaxed to the beneficiaries whom he originally designated in his will.

Such a plan can save thousands of dollars in taxes. Let us say, for example, that Dr. Smith's estate is worth $200,000. Through the use of a trust arrangement, he can facilitate a saving of $26,200 in the inheritance taxes chargeable against his widow's estate.

	100% Outright to Wife	*50% Outright to Wife; 50% in Trust*
Gross Estate	$200,000	$200,000
Specific Exemption	60,000	60,000
Net Estate	140,000	140,000
Less: Marital Deduction	100,000	100,000
Taxable Estate (Dr. Smith)	40,000	40,000
Federal Tax	4,800	4,800
Taxable Estate (Mrs. Smith)	195,200	100,000
Federal Tax	31,000	4,800

Tax Saving Achieved by Putting Half in Trust: $31,000–$4,800=$26,200

As you can see, proper use of this deduction can mean thousands of dollars of additional assets to your heirs, and as you can also see, technical errors can be extremely costly. Thus, it is advisable for you to consult attorneys who are skilled in the field of estate planning, so that your program may be sure to provide the proper qualification of your assets.



Blue Cross
Blue Shield



What Makes Blue Shield Different?

One frequently hears doctors ask, "Isn't Blue Shield just 'another insurance company'?" This question usually comes from a member of the generation of new doctors who have come into practice since the early '40's, and who know little of the desperate challenge that gave rise to the Blue Shield idea and the hard work with which its accoucheurs gave it birth.

Blue Shield represents a vast and triumphant effort on the part of American Medicine to prove to the people of the United States that, with their help, their doctors can solve urgent problems of medical economics without government interference or dictation. Blue Shield was created at a time when the insurance industry questioned the actuarial feasibility of voluntary medical care insurance on any large scale, and many doctors even feared that a voluntary program would inevitably lead to a compulsory health insurance system under government auspices.

Blue Shield has little in common with commercial accident and health insurance beyond the fact that it utilizes actuarial principles. Where the insurance company underwrites selected groups for the purpose of earning a profit. Blue Shield, reflecting the service ideals of the medical profession, makes its services available to the entire community, at rates based on the needs and experience of the community—including most particularly those people in the low-income groups who are most in need of medical-prepayment protection.

Whereas commercial insurance companies offer cash allowances—which may or may not have any relation to the doctor's normal charge for his services—Blue Shield schedules of payment have been negotiated and approved by the local medical profession. In most areas, Blue Shield benefits take the form of fully paid professional services, rendered by a "participating physician." That is the arrangement here in Iowa.

Blue Shield Plans are distinguished by non-profit operation—which means that their only purpose is service to the people and to the doctors. Non-profit operation also means that all the funds contributed by the subscribers are available for payment of benefits, save only a minimum that must be spent for actual operating costs and a small share that must be set aside so that a reserve will be accumulated for use when, and if, a time ever comes when utilization of benefits exceeds expectations.

Over and above all requirements of state law, Blue Shield Plans are required to maintain strict "membership standards." Each plan must have the continuous approval of the local medical society; it must render an annual report to that society; and at least 51 per cent of the physicians in its area must be participants.

Blue Shield utilizes insurance principles, but because the great majority of American physicians participate in it, Blue Shield is able to transcend the limits of insurance and to become a true community service on behalf of America's physicians.

THE JOURNAL *Book Shelf*



BOOKS RECEIVED

CLINICAL MEMORANDA ON ECONOMIC POISONS, by the U. S. Department of Health, Education and Welfare, revised April 1, 1956.

THE PHYSICIAN-WRITER'S BOOK: TRICKS OF THE TRADE IN MEDICAL WRITING, by *Richard M. Hewitt*, A.M., M.D. (Philadelphia, W. B. Saunders Company, 1957. $9.00).

PEDIATRIC CARDIOLOGY, by *Alexander S. Nadas*, M.D. (Philadelphia, W. B. Saunders Company, 1957. $12.00).

CLINICAL USE OF RADIOISOTOPES, by *William H. Beierwaltes*, M.D., *Philip C. Johnson*, M.D., and *Arthur J. Solari*, M.D. (Philadelphia, W. B. Saunders Company, 1957. $11.50).

MEDICAL DEPARTMENT UNITED STATES ARMY IN WORLD WAR II, VOL. II: GENERAL SURGERY, by *Col. John Boyd Coates, Jr.*, M.C., *Michael E. DeBakey*, M.D., *Philip Giddings*, M.D., and *Elizabeth M. McFetridge*, M.A. (Washington, D. C., Office of the Surgeon General, 1955).

PRACTICAL DIAGNOSIS AND TREATMENT OF LIVER DISEASE, by *Carroll Morton Leevy*, M.D. (New York City, Paul B. Hoeber, Inc., 1957. $8.50).

THE YEAR BOOK OF DRUG THERAPY (1956-1957 Year Book Series), ed. by *Harry Beckman*, M.D. (Chicago, The Year Book Publishers, Inc., 1957. $6.75).

BOOK REVIEWS

EPILEPSY AND THE LAW, by *Roscoe L. Barrow* and *Howard D. Fabing*, M.D. (New York, Hoeber-Harper, Inc., 1956. $5.50).

The authors of this book have done extensive research in the literature and the laws relating to the management of epilepsy at state and national levels, and they have clearly set forth the inequities in the present day legal procedures that discriminate against the epileptic and make his place in society insecure. They also show the legal steps which should be taken, in accordance with modern knowledge of the disease and the methods now available for its control.

There are an estimated 1,500,000 epileptics in the United States—approximately one per cent of the population. Anticonvulsants and other new developments in medication are controlling their seizures with noteworthy success, so that no more than a small percentage of patients require hospital care. Few of those who are institutionalized possess normal intelligence.

It has been almost impossible to return normal, controlled patients to society or to provide them with jobs that will help in their rehabilitation because lay people generally are ignorant of the nature of epilepsy, because the public persists in stigmatizing epileptics and because legal barriers have been erected against them.

Laws governing drivers' licensing, marriage and workmen's compensation are archaic, and an overhauling of them is long overdue. As a progressive and intelligent people, we cannot continue to consign the epileptic to the backwaters of our society. Because the social impact of our prejudices and of our outmoded laws affects all members of the epileptics' families, about 7,500,000 people are being hurt.

All of us should join in endorsing the changes in epilepsy laws which are recommended by the authors of this volume and by the outstanding organizations in the United States that are concerned with neurology and epilepsy. Only by such reforms can this large segment of our population be enabled to lead normal, productive lives and thus make their full contribution to society.—*Grace M. Sawyer*, M.D.

CLINICAL PATHOLOGY: APPLICATION AND INTERPRETATION, by *Benjamin B. Wells*, M.D., Ph.D. (Philadelphia, W. B. Saunders Co., 1956. $8.50).

According to its preface, this rather concise treatise, written by a well-qualified internist, is offered to medical students and physicians as a guide to the application and interpretation of clinical laboratory studies. It is the impression of this reviewer that this practical objective has been very well achieved.

The introductory chapter deals with laboratory procedures generally applicable to the study of infectious diseases. The following chapters take up laboratory aids in the diagnosis of diseases of various systems and organs. Finally, special attention is given to laboratory studies in surgery and in obstetrics.

The book should help the practitioner of medicine to gain perspective as to relative values of laboratory studies. It stresses practical interpretation and usage. It is not a manual of technic, although its rather short closing chapter details certain procedures for those who are interested in performing office and bedside tests. A table of normal values is also included and it should prove handy.—*Richard F. Birge*, M.D.

CARE OF THE LONG-TERM PATIENT (Chronic Illness in the United States, Vol. II), by The Commission on Chronic Illness. (Cambridge, Massachusetts, Harvard University Press, 1956. $8.50).

The preface of this book succinctly describes its place. The preface says, "This book is the report of the Commission on Chronic Illness with regard to the care of the long-term patient. It is Volume II of the Commission's series of reports, which includes also Volume I, Prevention of Chronic Illness; Volume III, Chronic

Illness in a Rural Area; and Volume IV, Chronic Illness in a Large City."

The Commission on Chronic Illness is composed of doctors, administrators and other well-informed people. Contributors to the volume include, among others, organizations such as the American Cancer Society, the American Hospital Association, the American Medical Association, Johns Hopkins University and the United States Public Health Service.

The book deals with the care of the long-term patient at home and in various institutions, and presents all points of view. Suggestions of the Commission on Chronic Illness are presented in bold type, and detailed presentations follow, on such problems as the nursing home, the hospital, the home, rehabilitation, training of personnel for the care of the long-term patient, research for planning and administration, etc.

The "set-up" of the volume is excellent. High quality and authoritative workmanship is evident throughout its pages. The English is excellent and easy to read. Alterations in type and excellent outlining make reference easy. The topic is one which, like it or not, we shall all be concerned with to a greater or lesser degree in the coming years. Here is a broad basis for our thinking as we undertake our search for answers to the various parts of this huge problem.

The trouble is that the book will not have "practical, mass appeal." It *should* be read by all of us who are interested in social, medical or economic care for the chronically ill, but it probably will be read only by those who have a "special interest" in the field. Yet, the problem is one in which all far-sighted individuals should be interested, in order that they may help to make a better America.—*Daniel A. Glomset,* M.D.

Pelvimetry, by *Herbert Thoms,* M.D. (New York, Paul B. Hoeber, Inc., 1956. $5.00).

Dr. Thoms has devoted a major portion of his career to studying the measurement of the female pelvis, and in this small volume he has condensed his findings and views on the subject. His knowledge and his familiarity with the work of others over the past three decades are quite evident as one progresses with the reading of his monograph. The variations and abnormalities of the bony pelvis are pointed out in detail, and the clinical and roentgenologic means of diagnosis are clearly described.

Many of us ought to take note of his conclusion that not only external but also internal pelvimetry (with the exception of outlet mensuration) are extremely unreliable. He looks for the day when a single inlet film for screening purposes will be adopted as a routine part of the prenatal examination.

Although his chapters are somewhat overlapping and although he tends to be repetitious, Dr. Thoms' book is to be highly recommended to those who are interested in obstetrics and radiologic diagnosis.—*Claude H. Koons,* M.D.

Yearbook of Obstetrics & Gynecology (1956-1957 Year Book Series), ed. by *J. P. Greenhill,* M.D., (Chicago, The Year Book Publishers, Inc., 1956. $6.75).

This year book, covering the 12 months from July, 1955, to July, 1956, just as those published previously, gives the reader a well-rounded survey of the articles of interest that have been published throughout the world in the field of obstetrics and gynecology. The abstracts are concise, readable and interesting. Dr. Greenhill demonstrates to us once again the vastness of his knowledge of the world's literature in this area.

This book is a "must" for the busy practitioner interested in obstetrics and gynecology, who lacks the time and facilities for a perusal of the multitude of journals in which significant articles have appeared.—*Claude H. Koons,* M.D.

The Philosophy of Medicine, by *William R. Laird,* M.D. (Charleston, West Virginia, Educational Foundation, Inc., 1956. $3.00).

In considering his subject, the author has chosen to follow the five fields enumerated by Will Durant in his story of philosophy: logic, ethics, esthetics, politics and metaphysics. He rightly emphasizes the value of reasoning from cause to effect, of evaluating one's clinical findings carefully and of searching everlastingly for improvement in one's work. In other words, the physician should regard every patient as a challenge to his ability to diagnose and treat human beings.

The art of medicine is considered in the section devoted to esthetics. Dr. Laird's description of the old-time doctor who seemed to be a combination of physician, lawyer and clergyman is well put, and he emphasizes the doctor's need to familiarize himself with subjects other than medicine. Such broadening of one's mental acumen, he points out, will enhance the physician's familiarity with his patients, be they high or low, rich or poor.

In considering ethics in relation to the philosophy of medicine, the author insists that the doctor should take care, not just about his relations with his colleagues, but about his dealings with all of his fellow men. He points out that character is the outward expression of an individual's integrated philosophy, and he hopes the day will come when medical schools will discard candidates obviously lacking in character. Fee-splitting, ghost surgery and unnecessary operations, he totally condemns.

As regards politics and the medical profession, Dr. Laird aptly calls attention to the physician's duty to his home community and medical society. He recommends that the doctor take an interest in civic matters and that he share in responsibility for them. Also, he thinks that the doctor should never seek political preferment in medical organizations, but rather should let the office seek the man. He brings into sharp focus the difference between the medical statesman and the medical politician.

In the closing chapter, on metaphysics, the author declares that one of the most metaphysical of obligations is fidelity to the oath of Hippocrates, and that the physician should realize he is dealing constantly with minds and souls, as well as with bodies. The spiritual side of man is emphasized, and the importance of hospital chaplains is skillfully brought out.

To the physician who cares to develop a philosophy of medicine, or to improve the one he already has, a perusal of Dr. Laird's booklet will prove both beneficial and entertaining.—*Tom Bentley Throckmorton,* M.D.

Iowa Academy of General Practice

STUDY REQUIREMENTS OF THE AAGP

There are 21,000 members of the American Academy of General Practice. They compose the 48 state chapters and the chapters in Alaska, the District of Columbia and Hawaii.

The Iowa Academy of General Practice has more than 475 active members.

A membership lasts for no longer than three years, and during that period, a member must complete 150 hours of postgraduate study to qualify himself for reelection for another three-year membership period. Fifty of those hours must be earned by attendance at courses classified in Category I; the remainder may be earned by attendance at courses in Category II.

The AAGP is the only organized medical group that exacts such a requirement of its members. By doing so, it maintains its position as one of the foremost groups in organized medicine.

The definition of acceptable postgraduate study for Academy members was formulated by the AAGP's National Commission on Education, and was adopted by the Academy's Congress of Delegates. All courses must be of high educational, ethical and medical standards.

Category I credit is given for (A) postgraduate courses given by an accredited medical school, or recognized postgraduate school; (B) courses sponsored by the AAGP or by any of its constituent state or territorial chapters or by a medical-school administrator, provided each has been approved in advance by the regional advisor, who is a member of the Commission on Education, and processed and announced by the AAGP or by one of its constituent chapters; (C) the annual scientific assembly of the AAGP and the annual scientific assembly of each state chapter, provided that each has been approved in advance by the regional advisor; and (D) the publication, by an AAGP member, of a scientific paper in a state or national medical journal, or the presentation of an original scientific paper to a medical audience at the county level or above. AAGP sponsorship of a postgraduate course or meeting does not mean the mere endorsement or approval of a course by the Academy. It means that an AAGP member has been an active member of the committee that planned the program.

Category II credit is given for attendance at scientific medical meetings not included in Category I.

All members of the Iowa Academy are urged to read and study an article that is to be published in the next issue of the HAWKEYE GP NEWS. It is hoped that that article will help further to clarify the definitions of "Category I" and "Category II."

All physicians, whether they are certified specialists or general practitioners, are urged to take an active part in postgraduate work. It is only by that means that they can equip themselves to provide their patients with up-to-date medical care, year after year.

CAMP FOR DIABETIC CHILDREN

The Chicago Diabetes Association will conduct its eighth annual camp for diabetic children from July 14 until August 4, 1957, at Holiday Home, Lake Geneva, Wisconsin. Boys and girls from eight through 14 years of age are eligible to attend, and fees are adjusted to meet individual circumstances.

In addition to the personnel that is usual at summer camps, the Association furnishes resident physicians and dieticians trained in the care of diabetic children.

Physicians are urged to notify the parents of diabetic children who may wish to attend, so that they may write promptly to the Association, 5 Wabash Avenue South, Chicago 3. The capacity of the camp is limited.

ATTEND THE IAGP LUNCHEON

Iowa Room, Hotel Savery

12:15 p.m., Tues., Apr. 30

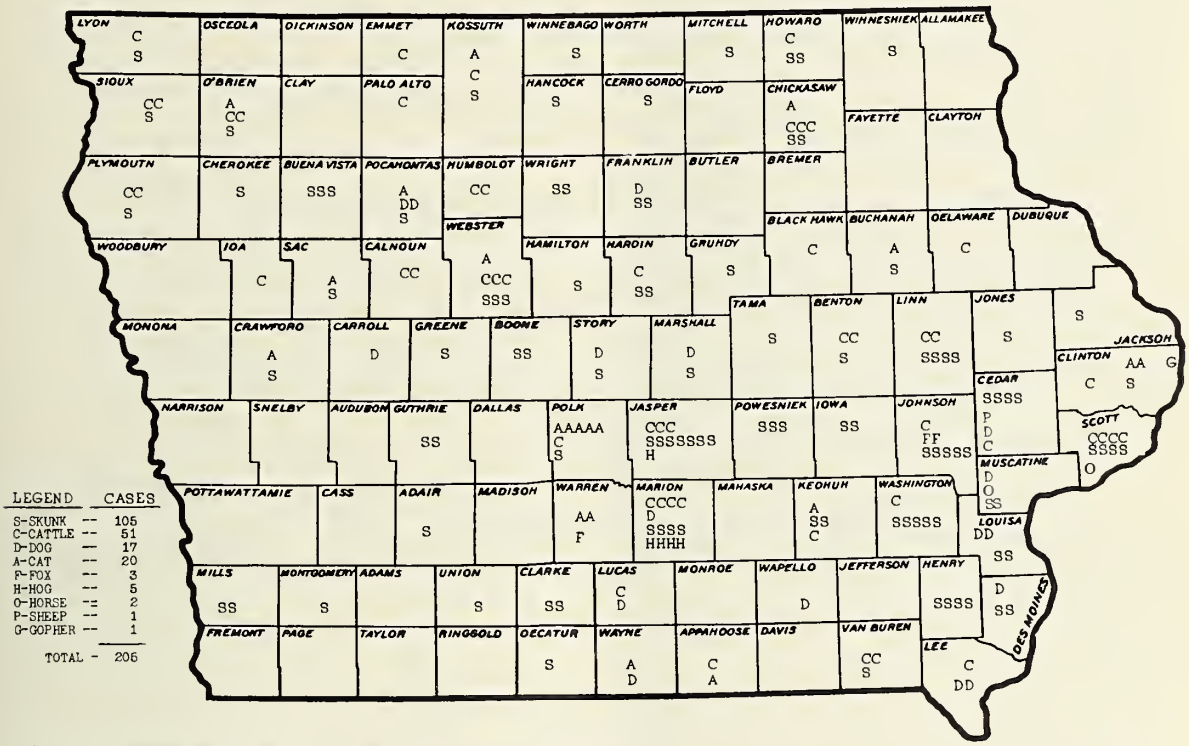
During the ISMS Annual Meeting

Make advance reservations by writing to the IAGP office.

STATE DEPARTMENT OF HEALTH

Edward G. Zimmer
COMMISSIONER

RABIES IN ANIMALS, 1956



All but 15 cases have been confirmed by laboratory examination.

VACCINATION OF DOGS AGAINST RABIES

Rabies is reported in dogs as well as in several other species of domestic and wild animals in Iowa each year, and elimination of the disease among dogs would greatly reduce the number of persons who are required to take anti-rabies (Pasteur) treatment, for the dog normally lives in close association with man and is capable of inflicting severe bite wounds.

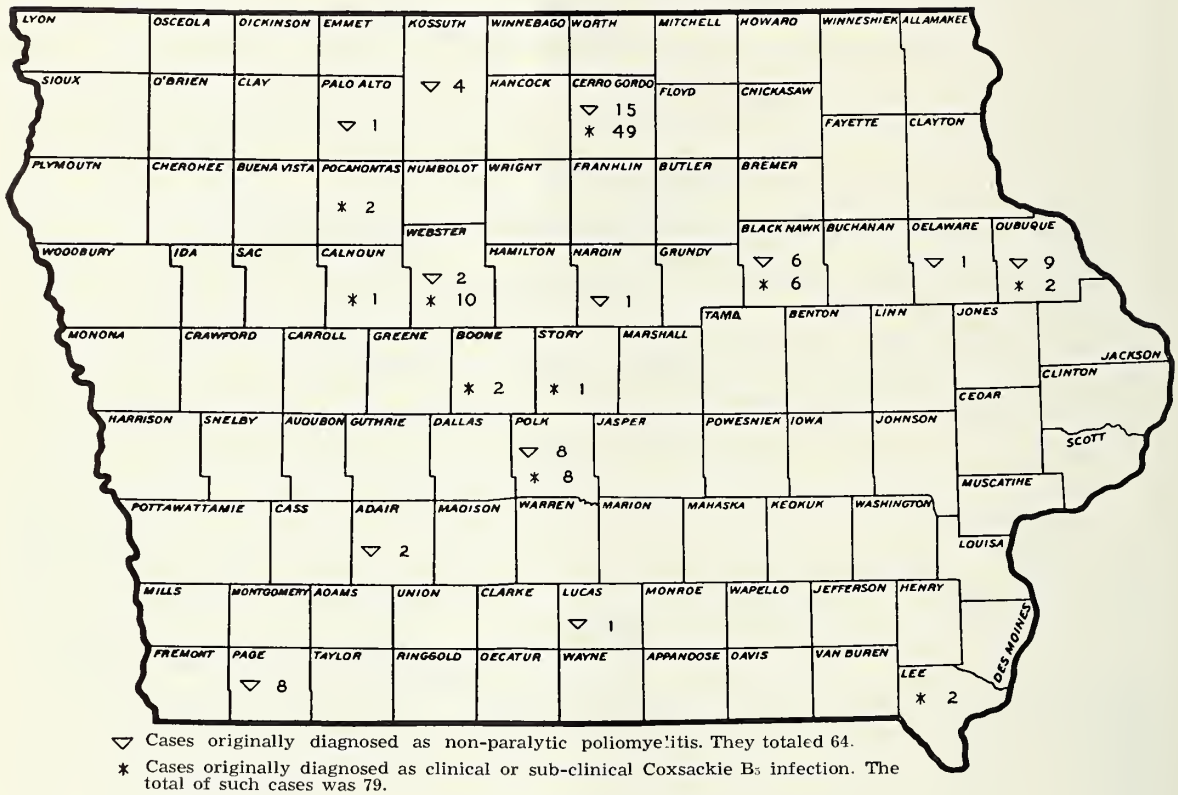
It has been proved that vaccination protects dogs from the disease. The U. S. Army requires anti-rabies vaccination of all pets kept at its posts or camps, and though the animals owned by Army personnel mingle with unvaccinated ones in areas adjacent to the military installations, no cases of rabies have developed. In Iowa, similarly, no rabies has been reported among vaccinated dogs.

Anti-rabies vaccination causes practically no discomfort to the dog, and it is safe. All vaccine for animal use must pass rigid safety and potency tests of the U. S. Department of Agriculture.

A dog does not acquire the full degree of protection until about 30 days after vaccination. Since vaccination of young puppies is not always effective, puppies that have been vaccinated before six months of age should be revaccinated. Anti-rabies vaccination of pets other than dogs is also recommended.

COXSACKIE B_5 INFECTION IN IOWA, 1956

Based on Laboratory Reports Completed
Through January 19, 1957



▽ Cases originally diagnosed as non-paralytic poliomyelitis. They totaled 64.

* Cases originally diagnosed as clinical or sub-clinical Coxsackie B_5 infection. The total of such cases was 79.

1956 COXSACKIE B_5 CASES

Up until January 19, 1957, virus laboratory studies had confirmed the clinical diagnoses of 143 clinical and subclinical cases of Coxsackie B_5 infection in Iowa during 1956. Many more reports will probably follow as the laboratories find time to complete processing specimens collected during the summer and fall of 1956.

As noted on the accompanying map, 64 of these cases were originally reported to the State Department of Health as non-paralytic poliomyelitis. Probably well over half of the 1956 Iowa cases reported as non-paralytic poliomyelitis were Coxsackie infection. For example, Polk County reported 99 cases of non-paralytic poliomyelitis and no cases of paralytic poliomyelitis. Even allowing for the likelihood that immunizations reduced the incidence of paralytic poliomyelitis, one should have expected that there would be some paralytic cases to be discovered in a group so large as 99.

The Coxsackie isolations, to date, have been reported from 17 counties. Specimens submitted from at least 12 other counties are among those not yet processed.

The age distribution of the patients from whose sera the Coxsackie virus has been isolated is similar to the age distribution of poliomyelitis patients. About two-thirds of the cases were in persons under 20 years of age. Recovery was complete within one or two weeks after onset.

The subclinical cases which have been referred to were the family contacts of known cases. Some had minor illnesses; others of them reported no illnesses. The subclinical presence of Coxsackie B_5 virus in those individuals was discovered in the course of an investigative program that called for the examination of family contacts of known cases.

Iowa Maternal Mortality, 1953-1954

Cases Edited and Summarized by the Maternal Mortality Reviewing Board

HEMORRHAGE DEATHS

CASE NO. 35

The patient (age 28; parity not stated; ectopic) had enough lower abdominal pain to require hospitalization within the first three months of her pregnancy. Her first admission was in another state, and no details were available. On her second admission, no abnormalities were found other than an enlarging uterus. About two weeks later, the patient collapsed with severe pain, and was dead upon her arrival at the hospital. Autopsy showed a mass attached to the left horn of the uterus which had ruptured posteriorly and contained a fetus and placenta.

This death was related to pregnancy. It was not preventable. If this extrauterine pregnancy could have been recognized, the death would have been preventable. However, the diagnosis of an interstitial pregnancy is extremely difficult. A very careful history might have helped, and more attention should have been paid to the patient's repeated attacks of pain, for they are unusual in an early pregnancy.

CASE NO. 44

During the first five months of pregnancy, this patient (age 22; para 0; ectopic) had had repeated episodes of severe nausea and vomiting. Her first hospital admission was two months after her last menstrual period. At that time, her physician palpated a left ovarian cyst about the size of an orange. During the following month, she had another episode and was treated at a hospital in another county. At the beginning of her fifth month, she was again admitted to the hospital because of severe nausea and vomiting. The uterus was symmetrical, it extended about four fingers above the symphysis and it was moderately tender to palpation. Her abdominal cramps seemed associated with eating and were relieved when she took antacid tablets. On the fourth hospital day, she had an x-ray of her G-I tract, and an active, non-obstructive duodenal ulcer was found. It was decided to keep her in the hospital for ulcer management, and an internist was called for consultation. The patient became emotionally upset by this diagnosis, and she vomited and could not retain medication. She was given ⅙ grs. of morphine in the evening. The following morning at 6:00, the doctor was notified that the patient was pale, had a rapid pulse, had low blood pressure and was having some cramps in her abdomen. He asked that the intern check the patient, and 30 minutes later he was notified that she was in a critical condition. Upon his arrival at the hospital, she was dead. Autopsy revealed an ectopic pregnancy which had ruptured into the leaves of the broad ligament.

This death was related to pregnancy. It must be classed as preventable even though it is recognized that diagnosis would have been extremely difficult. This case demonstrates the value of the careful examination of the pelvis when a patient is first seen in pregnancy. At that time, the uterus is not large, and it is relatively easy to visualize adnexal pathology.

This patient had an ovarian tumor the size of an orange. Any tumor of this size should be removed in pregnancy, even if it is symptomless, the best time being after the third month of the pregnancy. When this patient was seen on subsequent occasions, her pregnancy was advanced, and the mass was mistaken for a pregnant uterus.

It is felt that this patient possibly started bleeding at the time of her emotional upset, and should have shown some signs of hemorrhage during the night. The quality of the nursing supervision throughout this period must be questioned.

CASE NO. 57

This patient (age 32, para 0; ectopic) had missed two regular periods, and called her family physician because of vaginal bleeding and pain. Her symptoms then pointed to a threatened abortion, but she denied the possibility of a pregnancy, saying that her husband was sterile. Her physician recommended that she go to the hospital, but she refused to do so. He refused to do a pelvic examination in her home.

A week later, the physician was called again, and once more he insisted that the patient be brought to the hospital. Twenty-four hours later, when she was admitted, she had a temperature of 99° F., a pulse rate of 140 and a tender mass in the lower abdomen.

Because of the behavior of the patient, the doctor suspected an abortion. A diagnosis was made of pelvic abscess or hematoma, and the patient was given multiple transfusions and antibiotics. Her temperature continued spiking to 102 or 103° F. Ten days after her admission, a cul-de-sac drainage was done, and a large amount of pus and old blood escaped. Drainage was established by tube. The patient's temperature continued to spike, and in spite of antibiotics and blood transfusions, her condition deteriorated. She died on the eleventh

postoperative day. Autopsy revealed an old ectopic gestation and a generalized peritonitis.

The death was related to pregnancy and was preventable. Because of poor cooperation on the part of the patient, the physician did not have a chance to do anything for her until she was in a serious condition. Nevertheless, she was in the hospital for 10 days before the mass and the cul-de-sac were explored. Apparently, no consideration was given to the possibility of an ectopic pregnancy because of the suspicion of an incomplete abortion. Prompt surgery, antibiotics and whole-blood replacement were indicated.

CASE NO. 76

This patient (age 42; para 6; ectopic) had a hypertensive cardiovascular disease of some years' standing, and an associated obesity. At the start of her terminal illness, she collapsed with pains in her abdomen. A tentative diagnosis of ruptured ectopic pregnancy was made, but surgery was delayed because of the patient's precarious condition. She was treated with repeated transfusions, oxygen and antibiotics. On the sixth day of hospitalization, the patient showed evidence of severe intra-abdominal bleeding, and surgery was done, even though consultants thought it contraindicated. A ruptured ectopic was found in the right tube, and there was much free blood in the abdomen. The patient did not withstand the operation, and died before it had been completed.

This death was related to pregnancy, and it was preventable. An extremely obese patient presents problems in evaluation and diagnosis, and surgery in such a patient is always hazardous. However, when an ectopic pregnancy is suspected, one truly is faced with an emergency. It seems that it would have been advisable to aspirate the cul-de-sac. If free blood had been present, there would have been no question about surgery, regardless of the general condition of the patient.

CASE NO. 94

This patient (age 30; para 0; ectopic) consulted an obstetrician about six weeks after her last menstrual period because of some lower abdominal pain associated with vaginal spotting. The probability of an ectopic pregnancy was considered, and was discussed with the patient. About two weeks later, the patient had a gastric upset after eating mushrooms that she had picked, and she collapsed. A second physician was called, and he found her in extreme shock, with a tender, distended abdomen.

The family told the physician the findings of the obstetrician. The attention centered upon the gastric symptoms, and the patient was sent to a hospital. The blood pressure was 44/40 mm. Hg., and the pulse was rapid and faint. The red count was 3.0, and the hemoglobin was 8.5 Gm. She was given atropine and 100 cc. of serum albumin. Her condition deteriorated. She did not respond to stimulants, and she died about eight hours after her admission. The autopsy revealed about 4,000 cc. of blood in the peritoneal cavity and a ruptured ectopic pregnancy in the right tube.

This death was related to pregnancy, and it was preventable. It would appear that the patient should have been kept under closer observation, since an ectopic pregnancy had been suspected. If the attending physician was informed of the obstetrician's suspicion of ectopic pregnancy, he should have sought a consultation with him. In a patient surviving eight hours after her collapse, it would seem that there would have been time for blood replacement and surgery, if the proper diagnosis had been considered.

CASE NO. 118

This patient (age 39; para 3; ectopic) made her first prenatal visit in her third month, at which time she had some vaginal bleeding associated with lower abdominal cramps. An ectopic pregnancy was suspected, and cul-de-sac puncture was done with no return. The patient was immediately hospitalized and prepared for surgery. The laboratory report showed a red blood cell count of 3.4, and hemoglobin 10 Gm.

At surgery, a right ruptured tubal pregnancy was found, with 750 or 1,000 cc. of free blood in the abdominal cavity. The right tube and the appendix were removed. Saline was started before surgery, and the patient received 1,250 cc. of it, together with 500 cc. of whole blood.

Her condition was fair until nine in the morning of the following day when there was some bleeding from the incision, an elevation of the pulse and a drop in the blood pressure. These symptoms continued and increased in severity, but the patient was not reopened until 12 hours after the first indications of shock. The site of the tubal intubation was dry, but there were hemorrhagic spots both from the visceral and abdominal peritoneum and from the incision. Six units of whole blood were administered. The patient failed to respond, and died eight hours later.

This death was related to pregnancy, and it was preventable. The diagnosis was made promptly. Apparently the cul-de-sac puncture was done as an office procedure without anesthesia. Production of diagnostic material is poor if the puncture is done without anesthesia.

At the time of the original surgery, when there was free blood in the abdomen, incidental surgery was contraindicated, and there were indications for more blood replacement than was administered.

Once symptoms of shock were noted, prompt intervention was indicated. In retrospect, it seems that this patient would probably have benefited from more vigorous blood replacement at the time of her primary surgery. After the development of symptoms of shock, blood replacement, fibrinogen and prompt intervention were indicated.

CASE NO. 33

This patient (age 26; para 3; premature separation of placenta) had had an uneventful and well-supervised pregnancy for the first seven months, but at the end of that time she went into labor and began to bleed heavily. She was admitted to the hospital. Inasmuch as the baby was already dead, her physician elected to follow a conservative course and to deliver her from below. She was given good blood replacement, and delivered a stillborn fetus of about 900 Gm. under cyclopropane anesthesia.

Immediately after delivery, she went into moderate shock, but recovered following adequate blood replacement. She had an oliguria which persisted until her death. With the oliguria, the patient developed uremia, and an early lower nephron nephrosis was diagnosed.

With competent consultation, the physician kept her in careful chemical fluid balance. Her urinary output gradually began to increase, until it reached 530 cc. on her tenth postpartum day. On the morning of her death, the patient developed labored breathing and frothy sputum. She was given 1,000 cc. of 5 per cent glucose and saline, administered fairly rapidly. Soon afterwards, pulmonary edema increased, and she died a respiratory death.

This death was related to pregnancy. It was not preventable. It represents a complication of premature separation of the placenta. Either this was a lower nephron nephrosis, or a condition resulting from a bilateral cortical necrosis. The differential diagnosis was difficult.

Bilateral cortical necrosis is always fatal. When associated with premature separation of the placenta, it is usually of the toxic variety. The patient is about 30 or 40 weeks pregnant, and usually multiparous. Often, the concealed hemorrhage is not massive, but is sufficient to cause the death of the fetus. The anuria begins either before delivery or soon afterward. As a rule, there is no urinary output. The patient is rational, and she usually has few complaints, but progressive nitrogen retention soon develops.

Anemia and the maintenance of a proper electrolyte and fluid balance are the clinical problems that are encountered in these patients. Often there is a low-grade fever on the third and fourth days postpartum. The patients usually get into electrolyte difficulties between the ninth and twelfth days, and it is then that death occurs. Certain patients will show a urinary output of 100 to 200 cc. at this time, but it never increases. The cause may be infection, pulmonary edema or potassium intoxication.

Lower nephron nephrosis in pregnancy can be due to a variety of causes such as transfusion reaction, toxemia, hemorrhage, infection, hepatitis and premature separation of the placenta. The clinical course is almost identical with that of cortical necrosis. However, starting on about the ninth day, urinary output begins, and it increases rather rapidly. During this phase of diuresis, sodium chloride deficiency can develop. After this phase, the nitrogen retention rapidly improves, and the patient usually recovers.

Since a postmortem examination was not obtained in this case, it is useless to speculate about which entity was present. This case was well managed. The only question that can be raised concerns the advisability of the rapid fluid administration on the day of the patient's death. If she had a lower nephron lesion and was mobilizing her own fluids, this could have been a factor in her death. If she had cortical necrosis, it would have had no bearing on the outcome.

1. Burt, R. L., Lock, F. R., Donnelly, J. F., and Wolff, W. A.: Conservative therapy in lower nephron nephrosis; report of two cases with survival. Am. J. Obst. & Gynec., **60**:820-826, (Oct.) 1950.
2. Duff, G. L., and More, R. H.: Bilateral cortical necrosis of kidneys. Am. J. Med. Sci., **201**:428-450, (Mar.) 1941.
3. Burt, R. L., and Kearns, P. R.: Bilateral cortical necrosis of kidneys; case report with laboratory and autopsy findings. Obst. & Gynec., **2**:484-494, (Nov.) 1953.

CASE NO. 110

This patient (age 31; para 3; premature separation of placenta) had had all previous deliveries by caesarean section and was anticipating a section for this delivery. About the beginning of the eighth month of her pregnancy, she began to have moderately severe abdominal pain, but did not call her physician for 4½ hours. When the physician reached her home, he found her pale and restless, and noted that her pulse was rapid. There was a small amount of vaginal bleeding. Blood pressure was 110/60 mm. Hg., and the pulse was 100. The uterus was firmer than usual, but contractions could be felt. No fetal heart tones were heard. The diagnosis of premature separation of the placenta was made, and arrangements were made to take the patient to a hospital by ambulance.

When the patient was moved, the bleeding became more profuse. Immediately upon her admission to the hospital, she was given oxygen and dextran while being prepared for surgery. A live baby weighing about 2,000 Gm. was delivered. A complete separation of placenta was found, involving a large area of the uterine wall. The uterus did not contract, and a hysterectomy was done.

The patient left the table in fairly good condition, but two hours later she began to go into shock. Treatment was instituted for the shock, but the blood pressure did not stabilize. Dullness appeared in the flanks. The patient was reopened about 12 hours after the original operation, and 2,000 to 3,000 cc. of blood was found in the abdomen. No active bleeding points could be found, and all operative areas were resutured. The patient was given blood by multiple routes and received 14 pints in all.

Postoperatively, the patient's condition was good, but two hours later, it began to deteriorate. A diag-

nosis of afibrinogenemia was made, and 2 Gm. of fibrinogen was given. For an hour or two, the patient's condition seemed to improve, but then she went once more into shock and failed to respond to any treatment.

This death was related to pregnancy and it was preventable. Having had three previous sections, the patient should have been aware of the necessity of her having immediate attention if any pain developed. If she had been adequately instructed and then neglected to call aid, much responsibility rests with her and with her family.

There is a possibility that this was not afibrinogenemia, but rather that the patient had bled out completely before replacement of blood got under way. If the case had truly been afibrinogenemia, it is felt that there would have been bleeding from a larger number of sites.

It has been noted, during the review of hemorrhage deaths, that dextran is used with great frequency. Recent work has shown that it is not as good a blood substitute as is gelatin. Indeed, gelatin not only works better but is less toxic.

In retrospect, it appears that this patient went into shock and showed definite symptoms of hemorrhage, yet her abdomen was not opened for almost eight hours.

CASE NO. 36

This patient (age 36; para 2; postpartum hemorrhage) had an uneventful, well supervised pregnancy. She went into spontaneous labor about two weeks after the date of her expected confinement. The labor progressed, and after the complete effacement and dilatation of the cervix, contractions were severe.

The physician attempted to apply forceps, but was unable to do so. Consultation was called, and another attempt at forceps application was made. The diagnosis of hydrocephalic baby was made, and the infant was delivered by version and extraction.

Immediately after delivery, the patient lost about 600 cc. of blood. She was given three units of plasma and two units of whole blood, and she was responding well. But 15 minutes after being put to bed, she asked to turn, then sat upright, gasped and stopped breathing. She did not respond to emergency measures. The physician and consultant felt that the restrictions imposed by the Catholic hospital rules had permitted no type of delivery other than the one which they had used.

This death was related to pregnancy. This death was preventable. Version and extraction is not the delivery of choice in cases of hydrocephalus. If the hydrocephalus is recognized, it should be drained, or delivered by cesarean section. It is clearly set forth on page 8 of the CATHOLIC HOSPITAL CODE that an aspiration for hydrocephalus is permissible.

After this patient had hemorrhaged, the uterine cavity and birth canal should immediately have been investigated for rupture or tear.

CASE NO. 60

This patient (age 34; para 3; premature separation of placenta) had had early and adequate prenatal care, and had shown no abnormal findings. About the expected date of confinement, she went into spontaneous labor. Soon after her admission to the hospital, she complained of severe and constant pain, and 20 minutes later, she delivered a 4,200 Gm. live baby, spontaneously. Prior to delivery, there had been no external bleeding, but the amniotic fluid was heavily colored.

The baby did not breathe spontaneously for 36 minutes, and during this time, the physician and nurse were concerned with combatting the anoxia of the infant. When the physician returned to the mother, he realized that she had been bleeding excessively, and delivered the placenta.

Bleeding continued, and it was only then that it was realized that the mother was in shock out of proportion to the amount of blood she had lost. She was removed from the delivery room to her own floor. Meanwhile, the nursing staff was searching for a venous cut-down set, and found it only after some delay. There was one bottle of 500 cc. type-O blood on hand, and it was finally started about 90 minutes after the delivery of the baby. It was insufficient as a means of combatting the shock, and the patient soon expired.

This death was related to pregnancy, and it was preventable. This case demonstrates rather dramatically the need for delivery-room assistants, and the need of postgraduate training for the nurses who work in delivery rooms. Consultation and help of any kind would have aided in averting this death. Certainly, the child needed attention, but the mother should never have been allowed to bleed for so long a time as 36 minutes.

When the mother's bleeding was discovered, it was unwise to move her. The treatment should have been carried out in the delivery room. It is true that insufficient blood was on hand in the hospital, but even more importantly, there was a delay of almost two hours in getting blood into the patient.

CASE NO. 82

This patient (age 38; para 14; premature separation of placenta) had been scheduled to be delivered at University Hospitals. Her first prenatal visit was in her fifth month, at which time she weighed 169 lbs. and had a blood pressure of 170/90. The urine was negative. At her second visit the following month, her blood pressure was 138/80, and she weighed 172 lbs.

On the day that she was to be picked up by the ambulance, she went into spontaneous labor, and her membranes ruptured. She was taken to a local hospital and was taken directly to the delivery room, for she was bleeding and was in shock. At that time, dilatation was 5cm., and pains were continuous and tetanic. As soon as dilatation was complete, forceps were applied, and a 2,400 Gm. baby

was delivered under ether anesthesia. The placenta was delivered manually, five minutes later.

Ergotrate and pituitrin were given, and intravenous fluids were started immediately, followed by whole blood. The patient also received adrenalin, coramine and adrenal cortex, but she did not respond, and died three hours after delivery. A partial autopsy showed an abruptio placentae, with hemorrhagic infiltration of the myometrium.

This death was related to pregnancy. This death was preventable. The patient evidently had hemorrhaged considerably before she came to the hospital, but if blood had been available, it could have been pumped in through multiple sites immediately. Since she showed abnormalities, with an elevation in blood pressure, she would have been received at University Hospitals earlier in her pregnancy, and if she had been unwilling to go there early, because of her family responsibilities, a social welfare worker should have been summoned to arrange for the care of her family during her absence.

CASE NO. 95

This patient (age 21; para 1; premature separation of placenta) had been receiving obstetrical care in another state during this pregnancy. She had returned home for her delivery, and when she reported to her physician, she was having severe vaginal bleeding. Upon examination, it was found that she was four fingers dilated, that the head was in the pelvis and that the membranes were protruding.

The physician ruptured the membranes and sent the patient to a nearby unlicensed maternity home. An hour later, the patient delivered a 3,000 Gm. stillborn infant.

Immediately after the delivery, the woman had severe hemorrhage, went into shock and became unconscious. She was given two pints of blood substitute, and appeared to respond. She was then taken to a hospital 50 miles away.

Upon admission to the hospital, she had no pulse and no blood pressure. Cut downs were done in both arms. Two units of dextran and 5½ units of blood were pumped in under pressure. The pulse and the blood pressure responded a little, but the patient did not regain consciousness, and she died about six hours after admission. Autopsy showed a premature separation of placenta, with hemorrhage.

This death was related to pregnancy. This death was preventable. This case illustrates the importance of not temporizing with a bleeding patient until she can be brought to a hospital where adequate blood replacement can be given. If this patient had been sent directly to a hospital where facilities were available, it is felt that she would have been saved.

CASE NO. 96

This patient (age 22; para 0; premature abruption of placenta) was first seen in the third month of her pregnancy, and she then weighed 186 lbs. Her physician discussed with her the danger of her weight. She moved to another state, and did not return to her physician until the date of her expected confinement. By that time, she had gained 50 lbs., and had some elevation of blood pressure and showed 3 + albumin and some edema of the lower extremities.

She was admitted to the hospital and was given a medical induction by means of castor oil, high enema and pitocin. The head was high and the cervix was not dilated enough to admit the finger. In consequence, the physician did not feel it wise to attempt a rupture of the membranes. She was kept in the hospital, and on the fourth day, another medical induction was attempted. During her fifth hospital day, edema disappeared and the patient lost 5 lbs., although her albumin remained at 3+.

She was sent home, but returned five days later, with false labor pains. At that time she had 3+ albumin, and her blood pressure varied from 128 to 168 mm. Hg.

Forty-eight hours later, she was again dismissed, and that evening she went into spontaneous labor and returned with membranes ruptured. Upon admission, her blood pressure was 154/102 mm. Hg., and she still showed 3+ albumin. Pains progressed well, and there was no evidence of bleeding. Four hours later, the nurse noticed that the patient did not look good, and she found her pulse to be 120.

The doctor came at once, and felt that the patient must be bleeding, although there was no external hemorrhage. The cervix was dilated by that time, and she was taken to the delivery room. Blood was ordered. Consultation was called, and a 4,300 Gm. stillborn baby was delivered by low forceps under nitrous oxide anesthesia.

Immediately after delivery, the patient had a severe hemorrhage. The uterus did not contract. The placenta was removed manually, and the interior of the uterus was explored. No rupture was found. The patient died ten minutes after delivery. Autopsy showed that there was no rupture of the uterus, although there was about 300 cc. of blood in the peritoneal cavity.

This death was related to pregnancy and it was preventable. This patient should have had more active treatment from the beginning of her pregnancy. The minor improvements she made under medical treatment were insignificant. At the time she returned to her physician, her symptoms warranted the termination of her pregnancy. If the cervix was not ripe for rupture of membranes, section should have been considered before she was dismissed from the hospital after medical induction had failed.

Once the labor began progressing and she showed signs of shock, it is felt that supportive treatment should have been given before the delivery. Apparently, shock was noted more than an hour before her death, and during that time blood substitutes could have been given while whole blood was being prepared.

CASE NO. 43

This patient (age 44; para 3; postpartum hemorrhage) had made her first prenatal visit in the fourth month of her pregnancy. The initial examination revealed a small fibroid in the fundus of the uterus and a moderate anemia. Throughout the pregnancy, the fibroid was kept under observation, and the patient was treated for her anemia.

The patient went past her due date about ten days. She was having some painful contractions, and there was some dilatation of the cervix. She was admitted to the hospital, and induction was accomplished by means of intravenous pitocin. By the time the patient was completely dilated, there were some trickles of dark blood from the vagina. Consultation was called. Fetal heart tones could not be heard. A 4,200 Gm. stillborn child was delivered by forceps.

As soon as the baby was delivered, the patient began to hemorrhage. The placenta was removed manually, and the episiotomy was repaired. The repair was reinspected, and packs were applied, but the bleeding continued. Glucose and plasma were started immediately, and whole blood was added as soon as it had been obtained. Calcium, vitamin K, pitocin, stimulants and oxygen were all used, but shock progressed. Another consultant was called, and surgical intervention was being considered when the patient's heart stopped beating. Cardiac massage was instituted, but all efforts failed. The patient died three hours after delivery.

This death was related to pregnancy, and it was preventable.

It was felt that induction was not indicated in this case. If induction had been desired, with the cervix partially dilated, it could have been accomplished by simple rupture of the membranes.

It is probable that this death was due to a rupture of the uterus which, in turn, was caused by the intravenous pitocin. There is also the possibility that a lower-uterine rupture resulted from the mid-forceps delivery.

CASE NO. 55

This patient (age 39; para 5; postpartum hemorrhage) reported for prenatal care in her fourth month, and had adequate observation during the rest of her pregnancy. Fourteen days after the expected date of her confinement, she began to bleed. The doctor saw her in her home and felt that her condition was good. Fetal heart tones were present.

The patient was taken to the hospital immediately because of the bleeding. On the way, she hemorrhaged more heavily, and she continued to bleed with each contraction. At the hospital, her membranes were ruptured, and she was given four doses of pituitrin at intervals of 10 to 15 minutes. At that time, the head was at the spines, the cervix was partially effaced, there was some dilatation and no placenta could be felt. She delivered a live 9 lb. baby about an hour after entering the hospital.

The placenta was expressed intact, but the uterus did not contract satisfactorily. The patient continued to express large amounts of blood and clots. A plasma substitute, dextran, was started two hours after she entered the hospital, and 300 cc. was run in during the following hour and a half. By that time the blood was ready, and it was pumped in, but the patient died 12 minutes later, having received only a part of the blood.

This death was related to pregnancy, and it was preventable.

It was felt that pituitrin was given to the patient too frequently. As long as the patient was in labor, it is doubtful that it was of any value. With the amount of dilatation that had been achieved and in the presence of contractions, this patient could have been expected to deliver soon, and there were no indications for hastening labor.

There was considerable delay in giving blood to the patient. There seemed to be some question as to whether this was a pituitrin death. None of the symptoms pointed to it, for reaction to pituitrin is associated with edema of the larynx, and bleeding is not a part of the picture. Likewise, there would be no associated bleeding in coronary shock. It is felt that efforts should have been made to replace the blood, rather than to hasten the labor and the delivery of this patient.

CASE NO. 73

This patient (age 33; para 2; postpartum hemorrhage) had reported for prenatal care in the second month of her pregnancy. She had some tenderness in the region of the left ovary, and a slight bloody show which disappeared in a few days and was not noted again during the pregnancy. The remainder of her pregnancy was well supervised, and no abnormal findings were discovered.

The patient asked to have her labor induced because she had gone five days beyond her expected date of confinement. Induction was accomplished by means of castor oil, enema and ½ unit of pitocin. Labor progressed, and spontaneous delivery of a 3,600 Gm. infant occurred after three and a half hours of labor. Anesthesia consisted of pudendal block and a small amount of trilene. The placenta delivered in three minutes, and the patient was given ergotrate. The estimated blood loss was between 150 and 200 cc.

The patient was returned to her bed 30 minutes after delivery, in good condition. An hour later, the physician returned to her room and discovered her in shock, with no blood pressure or pulse. She was taken back to the delivery room immediately, and blood was ordered. The physician searched for bleeding areas, and attempted to clamp the uterine arteries from below. Saline was started about an hour later, after she had been returned to the operating room, but blood was not ready. The patient died before anything could be done for her.

This death was related to pregnancy, and it was preventable.

This death points out the need for keeping all obstetric patients in the recovery room for at least an hour, where they can have close nursing supervision.

Even though blood was unavailable, fluids and dextran could have been started much sooner, while blood was being waited for. It is advisable for larger hospitals to have type-O negative blood on hand to be used in such an emergency.

CASE NO. 67

This patient (age 27; para 0; postpartum hemorrhage) had had an uneventful, well supervised pregnancy. Labor had begun approximately six weeks before the expected date of confinement. The patient presented a frank breech, and when labor had progressed to the point of presentation of the buttocks, the breech was converted to a footling, and the child was delivered. The placenta delivered spontaneously, and there was no unusual bleeding.

Soon after delivery, the patient showed some signs of shock and was given a unit of dextran. Her blood pressure returned to 100/45 mm. Hg. Upon examination one hour after delivery, the patient had some tenderness of the fundus. The fundus was firm and high. Soon afterward, it was necessary to change the bed linen because of heavy flow.

Upon examination two hours after delivery, the patient's blood pressure had dropped, and her pulse rate was elevated. She was given stimulants, oxygen and subcutaneous fluid, and attempts were made to cut down on veins for whole-blood administration. But the condition of the patient had deteriorated so rapidly that it was impossible to get fluids into the vein, and she died about five hours after delivery. Autopsy showed a vertical rupture 4 cm. in length on the left wall of the uterus, extending down to a level 6 cm. above the cervix. The fundus of the uterus was normal, but the lower segment was remarkably thin. The uterus was distended and full of blood. There was hemorrhage into the broad ligament and retroperitoneally. The placenta was normal.

This death was relative to pregnancy, and it was preventable.

Conversion of a breech is likely to be hazardous, and there was no indication for such a procedure in this case, since labor had been premature. At the first sign of shock, immediately after delivery, there should have been a complete examination of the uterine cavity and birth canal.

Whenever a patient is given dextran, it should be followed immediately by whole blood, for the effects of dextran are short-lasting, and the blood pressure can be expected to drop again after a period of time.

Reference: Amspacher, W. H., and Curreri, A. R.: Use of dextran in control of shock resulting from war wounds. AMA Arch. Surg., **66**:730-740, (June) 1953.

CASE NO. 86

This patient (age 38; para 5; postpartum hemorrhage) had had heavy bleeding following her last delivery. She made her first prenatal visit for this pregnancy during her fifth month. No abnormalities were found during the remainder of the pregnancy.

She went into labor on the date of expected confinement, and spontaneous delivery occurred after a 15-hour labor. Venithene was used for anesthesia. During the early part of her labor, the pains were of poor quality. The cervix was dilated to 2 cm. The fetus presented vertex. Heart tones were heard, and there was no evidence of disproportion. Because the labor contractions were not strong, the patient was given quinine and pitocin in divided doses totaling 15 grains of quinine and 6 minims of pitocin. After dilatation was complete, the patient was given one ampule of thytuitary before being taken to the delivery room. The infant weighed 3,600 Gm. The placenta delivered 15 minutes afterward, and the patient was given ergotrate.

Soon after delivery, the patient lost between 500 and 1,000 cc. of blood, and was given one unit of dextran. The physician examined the patient thoroughly, and found her uterus to be intact and her cervix normal. There were no lacerations or retained secundines. She responded to the dextran and was kept in the delivery room until it was thought that all bleeding had stopped. The physician remained with the patient for about four hours after the delivery and thought her condition was satisfactory. But two and a half hours later, he was notified that the patient was bleeding, and when he returned he found that the uterus was full of clots. The patient died within a few minutes.

The death was related to pregnancy and was preventable.

When this patient entered the hospital, attempts were made to hasten her labor because her contractions were of poor quality. There appears to have been no reason for that procedure, and it is felt that there is no merit in the use of quinine.

After the hemorrhage, the patient was given dextran. It must be emphasized that dextran is only a temporary blood replacement, and that during the next few hours blood should have been obtained and given. Further, it is felt that in the two and a half hour interval while the doctor was away from the hospital, the patient must have shown symptoms of collapse, and that these should have been noted and reported by the nursing staff more promptly.

CASE NO. 121

This patient (age 34; para 6; rupture of an old cesarean scar) had had her last pregnancy terminated by cesarean section because of a preeclampsia. She made her first prenatal visit in the second month of this pregnancy, at which time she complained of steady headaches. No records of any

physical findings were made, but trinsicon was prescribed. She was seen twice more at monthly intervals, and again trinsicon was prescribed for her. She did not report to the doctor during the next two and a half months.

In the seventh month of her pregnancy, the physician was called to her home and found her suffering severe gastric pain. She said she had developed the pain in the night, and thinking it was due to gas, had taken a number of enemas. The pain seemed to increase, as a result. The patient was mentally alert, but the doctor could feel no pulse. The abdomen was not distended, and there was no evidence of vaginal bleeding. She was given 100 mg. of Demerol and transported to the hospital, but she was dead on arrival.

This death was related to pregnancy and it was preventable.

The prenatal care of this patient was most inadequate. A prenatal record should have been kept, especially for a patient who has had complications during previous pregnancies. Apparently, this patient had not been made aware of the danger that pain in the lower abdomen indicates during a pregnancy following a previous cesarean section.

This death was attributed to coronary occlusion, but that attribution does not seem logical in a patient of this age. Ruptured uterus would be the most likely diagnosis. Secondly, consideration could be given to an acute eclampsia superimposed upon a hypertension. The exact diagnosis should have been established by autopsy in this case, and if necessary, the case could have been referred to the coroner.

IOWA RURAL HEALTH CONFERENCE

On March 12, a statewide Conference on Rural Health will be conducted in the Great Hall of the Memorial Union, at Iowa State College in Ames, under the sponsorship of the Iowa State Medical Society, the Iowa State Department of Health, the S.U.I. Institute of Agricultural Medicine, the Iowa State College Extension Service, the Iowa Farm Bureau and several other organizations interested in health problems.

Every physician is urged to attend, and it is especially important that all ISMS rural-health contact men be present. They are being asked, in addition, to publicize the meeting in their respective communities so that as many lay people as possible will be attracted.

PROGRAM

9:00 Registration and Exhibit Display

10:00 Address of Welcome—Dr. S. P. Leinbach, Belmond, chairman of the ISMS Subcommittee on Rural Health

10:15 "Stresses and Strains of Rural Living"—Dr. Paul E. Huston, Iowa City, professor and head of the Department of Psychiatry at S.U.I.

11:00 SYMPOSIUM
- "Nutrition"—Dr. Ercell Eppright, professor and head of the Department of Foods and Nutrition, Iowa State College
- "Mental Health"—Dr. Paul Kersten, psychiatrist, Fort Dodge
- "The Cardiac Farmer"—Dr. Lewis January, professor of internal medicine, S.U.I.
- "Farm Safety"—Dr. N. J. Wardle, assistant professor of agricultural engineering, Iowa State College

2:00 "Emotional Problems Among Rural Children"—Dr. Reynold A. Jensen, professor of psychiatry, University of Minnesota, Minneapolis

2:45 Entertainment

3:00 PANEL DISCUSSION—Dr. F. H. Top, director of the S.U.I. Institute of Agricultural Medicine, moderator
- Dr. E. G. Zimmerer, Iowa Commissioner of Health
- Dr. J. W. Gauger, general practitioner, Early
- Tom Robb, county extension director, Washington, Iowa
- Mrs. H. L. Witmer, Iowa Farm Bureau
- Marie Levich, school nurse

4:00 Question and Answer Period
- Summary of the Conference—Ray Taylor, Iowa Tuberculosis & Health Association.

4:15 Adjournment

MORBIDITY REPORT FOR MONTH OF JANUARY

Disease	*Jan. 1957*	*Dec. 1956*	*Jan. 1956*	*Most Cases Reported From These Counties*
Diphtheria	1	1	5	Pottawattamie
Scarlet Fever	119	66	76	Des Moines, Polk
Typhoid Fever	3	0	3	Black Hawk, Dallas, Dubuque
Smallpox	0	0	0	
Measles	949	243	582	Linn, Polk
Whooping Cough	45	13	57	Polk, Pottawattamie
Brucellosis	9	11	14	Polk
Chickenpox	887	502	944	Linn, Polk, Pottawattamie, Scott
Meningococcus Meningitis	1	3	1	Osceola
Mumps	487	181	103	Des Moines, Linn, Polk
Poliomyelitis	1	5	6	Franklin
Infectious Hepatitis	31	19	48	Marion, O'Brien
Rabies in Animals	21	28	9	Crawford, Franklin
Malaria	0	0	0	
Psittacosis	0	0	0	
Q Fever	0	0	0	
Tuberculosis	19	43	28	For the State
Syphilis	89	133	35	For the State
Gonorrhea	43	62	68	For the State
Histoplasmosis	1	1	0	Marion
Food Intoxication	0	0	0	
Meningitis (type undet.)	1	1	4	Wright
Diphtheria Carrier	0	0	0	
Asceptic Meningitis	0	0	0	
Salmonellosis	2	3	1	Greene, Guthrie
Blastomyecosis	0	0	0	
Tetanus	0	0	0	
Chancroid	0	0	0	
Coxsackie B-5	0	2	0	
Encephalitis	3	1	0	Polk, Jasper, Linn
Influenzal Meningitis	2	3	1	Cedar, Polk
Amebiasis	1	0	0	Guthrie
Clostridium Welchii	0	0	0	
Shigellosis	0	0	1	

WOMAN'S AUXILIARY

to the

IOWA STATE MEDICAL SOCIETY

1957 Annual Meeting, Des Moines

PROGRAM

MRS. D. H. KING, *Presiding*

Sunday, April 28

2:00-4:00 Pre-convention Board Meeting, East Room, Hotel Savery—State Officers, Councilors, County Presidents & Committee Chairmen

6:30 Dutch Treat Supper (all board members and husbands), Des Moines Golf & Country Club

Monday, April 29

8:30-4:00 Registration, Mezzanine, Hotel Savery—All physicians' wives welcome

8:30-11:00 Hospitality Room—East Room, Hotel Savery
Hostesses—Woodbury County Auxiliary

9:30-10:00 INFORMATION PLEASE!!!
Committee Round Tables: AMEF, Auxiliary News & Press & Publicity, Doctor's Day, Endowment & Remembrances, Exhibits, Handicapped Craft Sales, Legislation, Mental Health, Public Relations, Organization, Recruitment & Loan Fund, Safety & Civil Defense

10:00 Conference of Delegates—Terrace Room, Hotel Savery—All physicians' wives welcome
Call to Order—Mrs. D. H. King, President
Invocation—Reverend P. M. Casady, D.D.
Introduction of National Auxiliary President, Mrs. Robert Flanders, Manchester, New Hampshire
Auxiliary Pledge—Mrs. Flanders
"I pledge my loyalty and devotion to the Woman's Auxiliary to the American Medical Association. I will support its activities, protect its reputation and ever sustain its high ideals."
Roll Call of Voting Delegates—Mrs. R. P. Mason, Secretary
Reading and Adoption of Convention Rules—Mrs. J. A. Downing, Parliamentarian
Recommendations of Reading Committee (for acceptance of previous annual meeting minutes)
Treasurer's Report—Mrs. E. A. Vorisek
Report of Finance Committee—Mrs. D. C. Wirtz
Report of Auditing Committee—Mrs. D. C. Wirtz
Report of Revisions Committee—Mrs. W. A. Seidler
Introduction of Councilors, County Presidents, and Committee Chairmen
Report of Nominating Committee (First Reading)—Mrs. C. H. Flynn
In Memoriam—Mrs. M. O. Larson

11:45 Recess for Luncheon

12:15 Luncheon Honoring National President, Terrace Room—Mrs. D. H. King, presiding
Luncheon Music—Mrs. H. C. Merillat
Greetings—Mrs. D. C. Wirtz, president Polk County Auxiliary
Response—Mrs. J. F. Gerken, president-elect
Introduction of Convention Committee Chairmen—Mrs. R. E. Hines
Introduction of Guests—Mrs. D. H. King
Speaker—Mrs. Robert Flanders, Manchester, New Hampshire, president, Woman's Auxiliary to the American Medical Association

2:00-4:00 Tour of Salisbury House—All physicians' wives invited. Buses will leave Hotel Savery at 2:00 P. M.

9:00-12:00 Spring Dance (Informal), Grand Ballroom, Hotel Savery (Benefit—Auxiliary Nurses' Loan Fund)

Tuesday, April 30

8:30-12:00 Registration, Mezzanine Floor, Hotel Savery

8:30-11:00 Coffee—Hospitality Room, East Room, Hotel Savery
Hostesses—Wapello County Auxiliary

9:45 Conference of Delegates—Terrace Room—All physicians' wives are welcome
Roll Call of Voting Delegates—Mrs. R. P. Mason, secretary
Report of Nominating Committee (Second Reading)—Mrs. C. H. Flynn
Election Instructions—Mrs. J. A. Downing, parliamentarian
Election of Officers
Election of Delegates to National Auxiliary Convention
Election of Nominating Committee for 1958

10:30 "Current Legislative Problems"—F. C. Coleman, M.D., chairman, Legislative Committee, Iowa State Medical Society

11:00 Introduction of New Officers
Report of Reference Committee

11:30 Recess for Luncheon

ATTEND THE PRESIDENT'S COFFEE
Hospitality Room, 8:30-9:30
Monday and Tuesday Mornings
MEET YOUR STATE OFFICERS!

12:15 President's Luncheon—Terrace Room—Mrs. H. W. Smith, presiding
Invocation—Mrs. Julian M. Bruner
Accompanist—Mrs. E. A. Vorisek
Luncheon Music—Mrs. E. A. Vorisek
Community Service Award
Introduction of Guests:
Ernest B. Howard, M.D., assistant secretary, American Medical Association
W. L. Downing, M.D., president of the Iowa State Medical Society
Fred Sternagel, M.D., president-elect of the Iowa State Medical Society
G. H. Scanlon, M.D., member of the Advisory Board
E. F. Van Epps, M.D., member of the Advisory Board
R. F. Birge, M.D., secretary of the Iowa State Medical Society
D. L. Taylor, executive secretary of the Iowa State Medical Society
Installation of Officers—Mrs. H. W. Smith
Inaugural Address—Mrs. J. F. Gerken
Guest Speaker—Ernest B. Howard, M.D., assistant secretary, American Medical Association
Presentation of Past President's Pin—Mrs. C. H. Flynn
Presentation of Achievement Awards—Mrs. H. V. Kahler
Presentation of Exhibit Awards—Mrs. S. P. Leinbach
Courtesy Resolutions—Mrs. L. R. Hegg
Adjournment
2:30 Style Show—"Small Fur Fashions"—Harry N. Kneeter, Furrier
3:00-5:00 Tea—Veterans Memorial Auditorium
3:00 Post-Convention Board Meeting, East Room, Hotel Savery—Mrs. J. F. Gerken, presiding
7:00 Banquet, Grand Ballroom, Hotel Savery

MONEY

The Finance Committee requests that all bills, with vouchers, be sent immediately to Mrs. Elmer A. Vorisek, state treasurer. Bills not presented by March 15 will not be paid.

Voluntary contributions of 50 cents per capita for the Nurses' Loan Fund should be mailed to Mrs. B. F. Howar, in Webster City.

County treasurers and members-at-large are urged to send dues to Mrs. Vorisek no later than March 15.

SPRING DANCE

Monday, April 29

9:00-12:00

Grand Ballroom—Hotel Savery

Benefit—Woman's Auxiliary Nurses' Loan Fund

Don Hoy's Popular Orchestra

Standard Chemical Company will sponsor the social hour

OUR PRESIDENT SAYS—

Whan that Aprille with his shoures soote
The droghte of Marche hath perced to the roote,
And bathed every veyne in swich licour,
Of which vertu engendred is the flour;
Whan Zephirus eek with his sweete breeth
Inspired hath in every holt and heeth

* * *

Thanne longen folk to goon on pilgrimages,
And palmeres for to seken straunge strondes. . . .
—General Prologue to the CANTERBURY TALES

In these famous lines—ones that high-school English students are required to memorize, regardless of whether they understand them or not—Geoffrey Chaucer (1340-1400) says that spring fever, at least as much as religious ardor, was the reason why his pilgrims had set out to visit the place of Thomas à Becket's death. Similarly, a winter of confinement in our modern times urges us toward the open road as soon as the last snow has melted, and if we can find a good reason for taking a trip, then so much the better. I hope that each one of you will decide that you simply can't forego attending the Annual Meeting of the Auxiliary to the Iowa State Medical Society.

You have now had an opportunity to read *your* program for that meeting. I have emphasized that it is *your* program, for without each and every one of you, there would be no meeting, and indeed there would be no Auxiliary. The Polk County members have worked very hard in planning a fun-fact-finding and stimulating two days for you—and for your husband, when he isn't busy with medical programs. Ours is an organization to which only doctors' wives are privileged to belong. Let's keep it both enjoyable and productive.

As one wit of a husband remarked to his wife: "I guess you are right about cleaning your closets and answering your mail before we set out on this trip. Otherwise, if you should die before we got back, someone would be sure to say, 'She must have been took in an awful hurry, she left things in such a mess!' "

By now, your reports should be in, your reservations made for the meeting, and everything prepared so that you can enjoy yourselves without a twinge of conscience.

County presidents, be sure that the names of your delegates to the State Auxiliary meeting are sent to Mrs. Mason. You are entitled to one delegate for every 25 members, or fraction thereof, in addition to yourself. If your chapter has recently elected new officers, the immediate past-president probably can give the annual report more easily than you can. Indeed, I suggest that it is generally best for the officers of the past year to retain their posts until after the April meeting.

We have heard many Auxiliary members say that their communities are overly organized. It is good that we participate in other organizations;

our position as doctors' wives demands it. But our first allegiance must be to our husbands' profession. There are many jobs which the medical profession needs to have done that cannot be accomplished by lay groups. Our husbands are too busy to do those jobs themselves. So there lies our obligation. It is ours and no one else's. The work will not be done unless we do it.

Now is the time for us to make one last effort for 100 per cent organization, to collect the last dues, to enlist a new member and to subscribe to the BULLETIN. Give each one of your chapter's new officers a year's subscription to the BULLETIN, or make a point of urging them to subscribe. Be sure that copies of TODAY'S HEALTH are in your husband's waiting room, in your dentist's waiting room and in the libraries of your schools. Give one more gift subscription. And if you saved some money by shopping during bargain days, give one of those dollars that you saved to AMEF, and another of them to the Nurses' Loan Fund.

I hope to see all Board members at the March 12 meeting, and I am looking forward to the pleasure of greeting all of you at our Annual Meeting.

Jane King
President

COUNTY AUXILIARIES

Black Hawk

The Black Hawk County Medical Auxiliary is assisting in a series of forums sponsored by the WATERLOO DAILY COURIER and the Black Hawk County Medical Society. At the first of those meetings, a panel of Waterloo physicians answered questions on the basic functions and ailments of the heart.

Clay

The Clay County Future Nurses are really busy! On December 10, they toured the Mental Health Institute at Cherokee. The girls held a Christmas breakfast at Mrs. King's home; they sold Christmas Town cards for the Epilepsy League; and they were in charge of theatre collections for the March of Dimes. They have also held a bake sale, and they are helping with community projects.

Dallas-Guthrie

The Auxiliary to the Dallas-Guthrie Medical Society met in Dallas Center for luncheon on January 24. Sixteen members were present. At the business meeting held at the home of Mrs. Wm. Castles, the following officers were chosen for 1957: Mrs. E. E. Lister, president-elect; Mrs. H. W. Smith, first vice-president; Mrs. Robert Meyer, second vice-president; Mrs. C. E. Porter, secretary; and Mrs. Paul LaPorte, treasurer. Mrs. Donald Todd is the new president.

The members expressed interest in promoting "Milestones to Marriage" in the schools.

Dubuque

Mrs. S. A. O'Brien, Jr. and Mrs. James O'Brien were hostesses January 8 at the monthly dinner meeting of the Dubuque County Medical Auxiliary. The dinner table at the Dubuque Golf and Country Club was centered with an arrangement of pine boughs which sheltered an artificial cardinal.

The group discussed plans for the Mardi Gras Ball, which it sponsors annually to raise funds for student nurse scholarships. Mrs. D. C. Sharpe and Mrs. Elvin Olin are co-chairmen for this year's event.

Mahaska

The new president of the Mahaska County Auxiliary, Mrs. L. F. Catterson conducted the meeting on January 8 which followed luncheon at the Downing Hotel, in Oskaloosa. The other new officers are Mrs. Kenneth Lemon, vice-president; Mrs. Robert Alberti, secretary; and Mrs. Joseph Lederman, treasurer.

It was voted that the chapter will celebrate Doctor's Day, March 30, by sending red carnations to all of the doctors in the county and by entertaining them at a dinner party in the evening. The Future Nurses entertained their mothers on the evening of January 21. The program consisted of a panel discussion at which Mrs. Catterson and Mrs. Alberti represented the Auxiliary.

Wapello

The Auxiliary to the Wapello County Medical Society met in December at the home of Mrs. D. O. Bovenmyer. Medical legislation about to be considered in Congress was discussed by Mrs. E. B. Howell. Mrs. C. Ray Phelps and Mrs. Loran Coppoc gave reports on the activities of the Future Nurses Club of Ottumwa High School, and Mrs. Bovenmyer read "Let's Keep Christmas," by Peter Marshall.

In January, an evening meeting was held at the home of Mrs. Justus R. Roberts. A contribution was given to the AMEF in memory of Dr. E. G. Barton. Fifty cents per member was contributed to the Nurses' Loan Fund. Mrs. Edward Ebinger read the article "God Helps Them Who Help Themselves," which had appeared in the January issue of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY.

Webster

The 1957 officers of the Webster County Auxiliary are Mrs. L. J. O'Brien, president; Mrs. Roger Drown, vice-president; and Mrs. Dean C. Cooper, secretary-treasurer.

Woodbury

The new officers of the Sioux Med-Dames are Mrs. H. H. Burroughs, president; Mrs. H. E. Rudersdorf, vice-president; Mrs. G. R. Rausch, secretary; Mrs. Louis Frank, treasurer; and Mrs. A. T. Engelmann, president-elect. The chapter entertained the wives of doctors attending the annual meeting of the Sioux Valley Medical Association at Sioux City in February.

SAFETY FIRST! Slow down and live.

THE CHATTER BOX

Hi again!

Spring is practically upon us. Are you planning a trip during March or April? Let us hear about it.

The **Art Downings**, of Des Moines, are enjoying a vacation in sunny Florida.

The **Charles Gutenkaufs**, of Des Moines, are spending some time in Kansas City. Charlie is attending a meeting, but Lucille is sure they'll have plenty of time for fun and relaxation!

The new president of the Montgomery County Auxiliary is **Mrs. Glenn Skallerup** (Doctor Mary Louise).

Ruth Fieselmann is recovering from major surgery performed at the Spencer Hospital in January. We know she'd enjoy receiving notes from her friends around the state.

A news letter from the Association of American Physicians and Surgeons giving general information about the AAPS Essay Contest for 1957 says: "Iowa is showing signs of life. Material has been sent to **Mrs. L. F. Catterson**, of Oskaloosa."

Make your plans early. The 34th annual convention of the Woman's Auxiliary to the American Medical Association will be held in New York City, June 3-7, with headquarters at the Hotel Roosevelt. Notify **Mrs. Robert Mason**, secretary of State Auxiliary, if you plan to go.

Janet, the little daughter of the **Roger Drowns**, of Fort Dodge, has been in the hospital with a mastoid infection. We're happy to report that she's making a good recovery.

The **Louis Palumbos**, of Des Moines, are spending a month in Mexico. We know Helen will come back with glowing reports.

'Bye for now. We'll be back next month with all of YOUR news.

A NEW PROJECT

Much has been written lately on the question, "Why Can't Johnny Read?" The National Book Committee, a group of educators, industrialists and other civic leaders organized in the fall of 1954, decided that the answer is, "Johnny doesn't very much *want* to learn to read."

The chairman of the Committee, Mr. Gilbert W. Chapman, president of Yale & Towne Mfg. Co., the lock-making firm, thought he had an idea for making books attractive to youngsters. With the advice of the New York Public Library, he selected $200 worth of books for pre-school children —"picture books" in which there are only a few lines of type per page—and he put them on a rack that employees pass daily in his firm's plant at Gallatin, Tennessee. A sign above the rack said:

> The books on this shelf are books that small children enjoy. Take one home with you to read to your children. They will have a good time and so will you. Bring it back when you and your children have finished it together so other families may enjoy it too.

A questionnaire sent to employee-parents in February, 1956, elicited overwhelming approval of the program. More than half said their children would rather listen to books than watch television. Three out of four said their youngsters were interested. Nearly all asked for an extension of the book program to include teen-age and adult reading.

Mr. Chapman reported on the project in an article entitled "An Experiment in Reading," published in the December, 1956, HARPER'S MAGAZINE (pp. 73-75).

WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

President—Mrs. Dean H. King, 301 E. 4th Street, Spencer
President-Elect—Mrs. J. F. Gerken, Waterloo
Secretary—Mrs. Robert P. Mason, 5818 Chamberlain Drive, Des Moines 12
Treasurer—Mrs. E. A. Vorisek, 6205 Woodland Rd., Des Moines 12
Editor of THE NEWS—Mrs. E. T. Burke, 601 S.W. 42nd Street, Des Moines 12
Asst. Editor of THE NEWS—Mrs. D. F. Crowley, Jr., 663 44th Street, Des Moines 12

Your SUI College of Medicine

NORMAN B. NELSON, M.D., DR.P.H., DEAN

IOWA CITY

IN BRINGING GREETINGS to you, the physicians of Iowa, from the SUI College of Medicine, it is opportune that I give you a glimpse at the problems which a present-day medical school administrator faces, and at least a partial listing of the myriad activities that are in progress at *your* medical school.

Few people realize the complexity of such an institution, and even an extensive dissertation would fail to do it justice. For instance, we have *over 200 different sources of money*—i.e., gifts and grants, each designed for a specific project. Thus, there are more than 200 budgets. The following is a list of but a few of the organizations from which we received funds for research or teaching during 1956.

Iowa and American Cancer Societies
Iowa and American Heart Associations
Atomic Energy Commission
Life Insurance Medical Research Fund
Iowa Tuberculosis Association
Kellogg Foundation
Macy Foundation
Markle Foundation
Muscular Dystrophy Association
National Science Foundation
U. S. Children's Bureau
National Institutes of Health (all)
Nutrition Foundation
National Council to Combat Blindness
Lions Club
U. S. Army and U. S. Navy
U. S. Dept. of Vocational Rehabilitation
Various pharmaceutical companies, etc.

The State Board of Regents must finally approve every function of the SUI College of Medicine and of University Hospitals, but before a project is even submitted to the regents, it must be considered carefully in terms of its possible repercussions both within the school and outside of it. Within the University, it must (1) receive faculty approval through acceptance by a committee; (2) receive University acceptance (University policy); (3) satisfy state law; (4) accord with University budget and accounting procedures; and (5) receive the acceptance of the president's office. Outside of the University, the project must (1) accord with the policies of the Iowa State Medical Society and the AMA; (2) be acceptable to the legislators; (3) accord with the policies of the Association of American Medical Colleges; and (4) have a good chance of meeting with general public approval.

EDUCATION

Today, a college of medicine is responsible primarily, of course, for training undergraduate medical students, but it must also provide instruction for a great many other individuals. At SUI we have 450 undergraduate medical students, and in addition the faculty of the College of Medicine conducts courses for the entire University in the fields of bacteriology, biochemistry, pathology, physiology, pharmacology, anatomy and public health. Thus, we teach over 1,200 undergraduates and over 400 graduate students, in addition to 160 residents and internes. The 1,200 undergraduates of whom I have been speaking are preparing for such careers as physical therapy, occupational therapy, recreational therapy, x-ray technology, laboratory technology, hospital administration, nursing, social work, pharmacy, dentistry and physical education. As an illustration of what this extra teaching load means, I might mention that the Department of Anatomy offers 24 separate courses a year, of which only four are for medical students.

Since the academic year 1952-1953, the postgraduate training program at the SUI College of Medicine has almost trebled, and the time that the faculty and administrative staff have had to devote to it has grown proportionally.

Year	*Number of Conferences*	*Number Registered*	*Registrant Days**
1952-1953	8	675	
1953-1954	15	705	
1954-1955	20	1439	4433
1955-1956	25	1711	4799

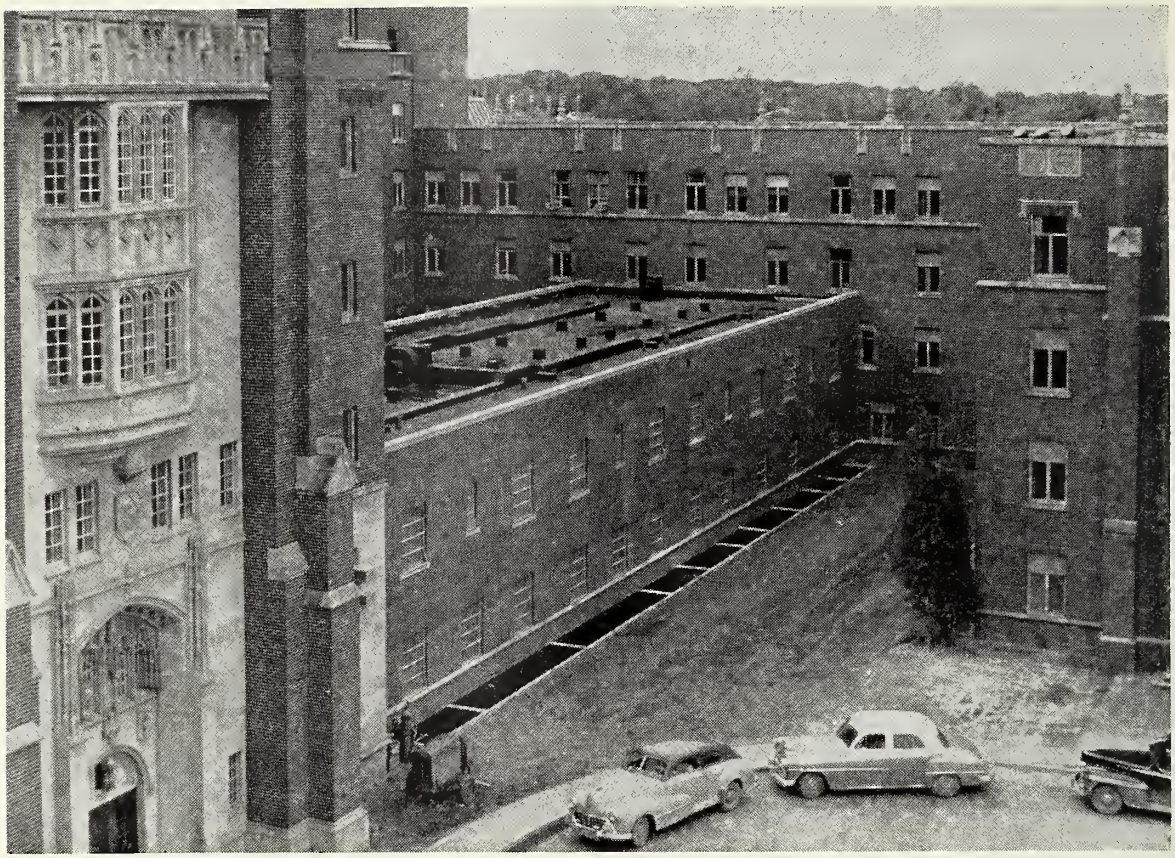
* Number of registrants multiplied by number of days.

SERVICE

To University Hospitals each year come more than 50,000 patients, of whom more than 95 per cent are persons whom you have referred there.



Dr. Nelson



The College of Medicine provides over 100 surgical, medical and diagnostic procedures that are available nowhere else in the state. Many of those procedures, of course, are still in the investigative stage.

RESEARCH

Aside from teaching medical students, the most important function of a college of medicine is medical research. Over 90 per cent of medical research occurs in schools of medicine. Practically every advance in diagnosis and therapy is the result of that work—penicillin, liver extract, insulin, polio vaccine, tranquilizers, cardiac surgery, etc.

We are proud of the many excellent research projects that are being conducted by the staff of the SUI College of Medicine. Every department is doing excellent research. Many of the reports on cardiac surgery in this issue had their inception in the research laboratory, but in fact, this whole issue of the JOURNAL could be filled by a simple listing of the articles that the faculty of the College of Medicine have published during the past year. The following are a few of the areas in which distinctive work has been done:

Pathology: Blood clotting (especially vitamin K)

Orthopedics: Lathyrism (laboratory production of Legg Perthe's type slipped epiphysis, scoliosis, ruptured disc and dissecting aneurysm)

Anatomy: Brain function and human fertility

Urology: Radioactive gold

Radiation Research: Radiation cataract

Ophthalmology: Virus infections of the eye, orthoptics and cellular physiology.

FACULTY

The individual capabilities and accomplishments of the faculty are an index of the calibre of research and teaching at a medical school. Here is a list of but a few of the national appointments held by members of the staff at the SUI College of Medicine:

Specialty Boards:

S. C. Cullen, M.D.—American Board of Anesthesiology
D. M. Lierle, M.D.—American Board of Otolaryngology
R. H. Flocks, M.D.—American Board of Urology
C. B. Larson, M.D.—American Board of Orthopedics
A. E. Braley, M.D.—American Board of Ophthalmology

Editorships:

T. C. Evans, PhD.—RADIATION RESEARCH JOURNAL

C. D. May, M.D.—JOURNAL OF PEDIATRICS
J. R. Porter, Ph.D.—JOURNAL OF BACTERIOLOGY
C. P. Berg, Ph.D.—BIOLOGICAL ABSTRACTS

Associate Editorships:

W. B. Bean, M.D.—AMA ARCHIVES OF INTERNAL MEDICINE
H. M. Burian, M.D.—(Section Editor) SURVEY OF OPHTHALMOLOGY
E. L. DeGowin, M.D.—JOURNAL OF LABORATORY AND CLINICAL INVESTIGATION
S. C. Cullen, M.D.—ANESTHESIOLOGY
J. T. Bradbury, Sc.D.—ENDOCRINOLOGY
N. S. Halmi, M.D.—ENDOCRINOLOGY
H. M. Hines, Ph.D.—JOURNAL OF PHYSIOLOGICAL MEDICINE
R. F. Sheets, M.D.—DISEASES OF THE CHEST
J. W. Culbertson, M.D.—Meakins, PRACTICE OF MEDICINE
C. B. Larson, M.D.—JOURNAL OF BONE & JOINT SURGERY
J. I. Routh, Ph.D.—JOURNAL OF CLINICAL CHEMISTRY
R. D. Gauchat, M.D.—NUTRITION REVIEWS
F. H. Top, M.D.—PUBLIC HEALTH REPORTS
E. D. Warner, M.D.—PROCEEDINGS OF THE SOCIETY OF EXPERIMENTAL BIOLOGY AND MEDICINE

National Research Awards—1956

I. V. Ponseti, M.D.—Kappa Delta Award—$1,000 presented by the American Academy of Orthopedics for outstanding research in orthopedics
F. W. Schueler, Ph.D.—Abel Award—$1,000 presented by the American Pharmacological Society to the outstanding pharmacologist in the country under 35 years of age (Dr. Schueler has since gone to New Orleans to be chairman of the Department of Pharmacology at Tulane.)
W. O. Nelson, Ph.D.—Albert and Mary Lackar Award for Planned Parenthood—$500
D. M. Lierle, M.D.—Newcomb Award presented by the American Laryngological Association for outstanding research and teaching.

The above list of awards is for 1956 only. Three Borden awards ($1,000 each) for research alone had come to members of the faculty at Iowa before 1956.

MEDICAL RESEARCH CENTER

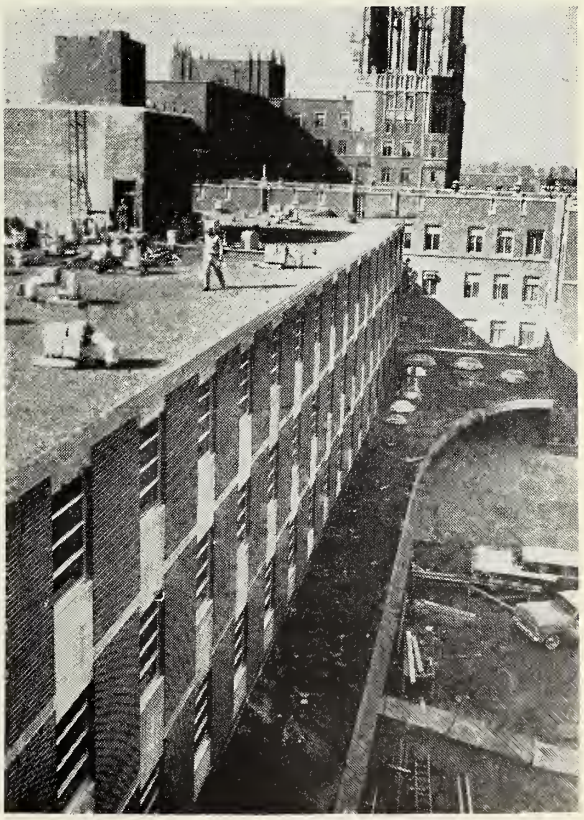
In the 28 years since the completion of the present University Hospital and SUI College of Medicine, funds for research have grown from less than $50,000 to well over $1,000,000 per year. The Department of Medicine alone has over $200,000 per year in research grants. In addition, many new projects have been introduced, notably the cardiovascular laboratories, the nutrition laboratory, social service, rehabilitation, occupational therapy, etc. Since no new space could be provided for them, we had to improvise. We shoved and we crowded; we turned toilet rooms and storerooms into laboratories.

The new $1,500,000 Medical Research Building will provide space for research laboratories that are now crowded into the Hospital. The Medical Research Building was designed to connect the Medical Laboratories Building (basic sciences) and the Hospital, making the center a complete, integrated unit. Some of the functions to be included in this center are (1) research laboratories for all of the clinical departments; (2) a metabolism research unit, designed for long-term metabolism studies on patients; (3) a new home for the Department of Biochemistry, which until the fire of 1953 was located across the river in the Chemistry Building, and which is becoming more and more essential to all research; and (4) a number of other units such as cobalt radiation, biochemical service laboratories for the Hospital, bacteriology laboratories for the Hospital, sound-proof rooms for hearing research, offices for the dean and the director of hospitals, and an electronics shop.

We expect to move into the new Medical Research Building by May 1, 1957. Even with this new space, however, we shall be crowded. Medicine is growing so rapidly that we are having difficulty in keeping up.

UNIQUE ASPECTS OF THE SUI COLLEGE OF MEDICINE

From time to time, nationwide attention has been attracted to the SUI College of Medicine. We have an extremely efficient statewide ambulance



system, by means of which 22 vehicles bring patients to and from the Hospital. In some instances, an ambulance has been kept in service for 500,000 miles. This plan allows the Medical Center to provide consultation service on indigent cases throughout the entire state.

The SUI private-practice plan operates completely within the ethics of the AMA as an *association of doctors*. The doctors determine and collect the fee, and determine its use. Most important, the plan is designed to de-emphasize private practice by members of the faculty. No one can increase his income by seeing greater and greater numbers of patients. The SUI Center should continue to provide consultation only. Although we are anxious to get interesting and unusual cases, we have no desire to increase our private practice.

The SUI private-practice plan was picked for presentation to the Association of American Medical Colleges in October, 1955, and the report was afterwards published in the journal of that organization.* It has attracted nationwide attention.

The SUI Institute of Agricultural Medicine, the first project of its kind in the country, was started in 1954. The Subcommittee on Rural Health of the Iowa State Medical Society, of which Dr. S. P. Leinbach is chairman, has been of great help in the program. We think it appropriate that Iowa pay particular attention to the ills of the farmer and do for farming what industrial medicine has done for industry.

The Iowa School for Handicapped Children was the first such institution in the country to be located in conjunction with a college of medicine.

CONCLUSION

I hope the members of the faculty of the College of Medicine will be charitable with this presentation. I am only too familiar with the fact that there are many outstanding achievements by members of the staff that are not included. Those which are included are intended to serve only as illustrations.

Many of our problems in medical education are the result of the tremendous growth in the body of knowledge. National organizations of all kinds representing such areas as civil defense, arthritis and rheumatism, multiple sclerosis, safety, cancer, heart disease, medical economics, etc., are continually pushing for more time to be spent on their specific areas. The provision of highly trained specialists and consultants in the many specific areas of medicine already in existence is of itself a difficult job.

Although this presentation has indeed been sketchy, I hope it has helped to give you physicians of Iowa an insight into your own College of Medicine.

* Nelson, N. B.: Iowa College of Medicine plan for private practice. J. Med. Ed., 31:488-492, (Jul.) 1956.



Scientific Articles

Intracardiac Surgery at the State University of Iowa

A Record of Progress, 1949-1956

JAMES W. CULBERTSON, M.D.

IOWA CITY

PRIOR TO JULY 1, 1949, only a few operations had been performed on the human heart at the State University of Iowa Hospitals, probably not more than two dozen altogether. During the succeeding 7½ years, we have been privileged to share in a worldwide movement in which the development of new knowledge and skill in remedial surgery for disorders of the heart and great vessels has developed at a phenomenal pace. Diagnostic and therapeutic procedures which were constructively speculative and experimental a decade ago are standard and routine today. Although it naturally is impossible to measure the contribution that these scientific advances have made to human welfare, comfort and happiness, and to individual hope for the future, it nevertheless has been gratifying to all of us to observe the rapid succession of improvements in medical practice and to see the new opportunities that have arisen for effective cardiovascular therapy.

In the November, 1953, issue of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY, several members of the cardiovascular group at SUI reviewed the thoracic cardiovascular diagnosis and surgical therapy then in progress at Iowa City. It is impressive to contemplate how much more is being done here at the present time. Although the present progress report is especially concerned with the problems of intracardiac surgery, the paper by Dr. Moyers on anesthesia in cardiac surgery is necessarily general in nature. His Table 3 summarizes the total experience with surgery on the heart and adjacent great arteries for the period July 1, 1949, through December 31, 1956. (For this discussion we have omitted deliberately any attention to a growing and encouraging experience with replacement surgery for aneurysmal, thrombotic and atheromatous lesions of the aorta below the level of attachment of the ligamentum arteriosum.) The table shows how new operative procedures were added after 1949, as they were developed from the experimental stage to a position of technical effectiveness and relative safety.

The best practical measure of achievement is the overall operative mortality rate of 8.3 per cent established by Dr. Ehrenhaft and his surgical associates for 533 major cardiovascular operations during a 7½-year period in treating more than 10 different types of congenital or acquired abnormalities. These results compare favorably with those so far reported from other medical centers that take special interest in the problems of cardiovascular surgery. It is noteworthy that the staff at University Hospitals has no control over the selection of most of the patients admitted for evaluation and therapy. Often they come long after the end of the optimum period for successful surgery. Moreover, the surgeon frequently finds himself under pressure from his internist or pediatrician colleagues to do heroic operations on patients who obviously are miserable surgical risks, or to do an evaluative thoracotomy on a patient with multiple lesions or with a severely debilitating and presently hopeless lesion such as a large primary septal defect resulting in a single common atrioventricle.

Further experience has reinforced our belief that a group or team approach to the problems of cardiovascular surgery leads to a particularly satisfactory understanding and contributes significantly

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to therapeutic results. The preoperative clinical observations are conducted by the pediatric or the medical service. Roentgenographic studies (including angiocardiography, if indicated) are made by the radiologic service. If additional physiologic diagnostic tests are required, they are made in the cardiovascular laboratory. The accumulated findings are reviewed, and the patient is presented for questioning and examination at a weekly cardiopulmonary conference at which all interested services are represented. A consensus of the group is recorded on the patient's hospital chart for the consideration of the physician directly responsible for his care. If surgery is elected, provision is made for the continuous monitoring of the electrocardiogram in the operating room and for the recording of intracardiac pressure levels if necessary. After the operation, an internist or a pediatrician follows the patient with the surgeons and the anesthesiologist.

There has been a great demand for physiologic methods of diagnosis, especially those employing the technic of cardiac catheterization. During the 6-year period from January 22, 1951, through January 30, 1957, a total of 767 such procedures were employed in 615 patients. Table 1 shows the geographic distribution of these patients' homes. There has been at least one patient from each of 92 of Iowa's 99 counties. Polk County has sent the largest number, 44. Despite the fact that the laboratory now is making more than 150 of these studies each year, there currently is so much of a backlog that patients are being scheduled seven months in advance. This is the present situation, even though the indications for cardiac catheterization have been limited severely so as to exclude most problems other than those involving the differential diagnosis of interatrial septal defect, interventricular septal defect, pulmonic stenosis and combinations of those lesions. That limitation largely accounts for the fact that most of these studies are now being made on children, as is shown by the age distribution shown in Figure 1. However, just as Table 1 shows that the clinical physiologic service is statewide geographically, Figure 1 demonstrates that these special diagnostic methods have benefited patients of all ages, from three months to 81 years.

TABLE 1

GEOGRAPHICAL DISTRIBUTION BY IOWA COUNTIES OF PATIENTS INVESTIGATED BY CARDIAC CATHETERIZATION FROM JANUARY 22, 1951, THROUGH JANUARY 30, 1957

County	*No. of Patients*
1. Adair	1
2. Adams	1
3. Allamakee	2
4. Appanoose	3
5. Audubon	4
6. Benton	7
7. Black Hawk	33
8. Boone	6
9. Bremer	5
10. Buchanan	6
11. Buena Vista	1
12. Butler	3
13. Calhoun	5
14. Carroll	1
15. Cass	4
16. Cedar	6
17. Cerro Gordo	10
18. Cherokee	5
19. Chickasaw	3
20. Clarke	5
21. Clay	9
22. Clayton	6
23. Clinton	13
24. Crawford	4
25. Dallas	5
26. Davis	2
27. Decatur	2
28. Delaware	6
29. Des Moines	7
30. Dickinson	0
31. Dubuque	19
32. Emmet	1
33. Fayette	7
34. Floyd	4
35. Franklin	2
36. Fremont	0
37. Greene	3
38. Grundy	3
39. Guthrie	2
40. Hamilton	0
41. Hancock	3
42. Hardin	3
43. Harrison	0
44. Henry	5
45. Howard	3
46. Humboldt	1
47. Ida	2
48. Iowa	3
49. Jackson	4
50. Jasper	14
51. Jefferson	2
52. Johnson	30
53. Jones	8
54. Keokuk	3
55. Kossuth	1
56. Lee	9
57. Linn	38
58. Louisa	2
59. Lucas	0
60. Lyon	4
61. Madison	0
62. Mahaska	6
63. Marion	9
64. Marshall	6
65. Mills	2
66. Mitchell	1
67. Monona	1
68. Monroe	1
69. Montgomery	6
70. Muscatine	11
71. O'Brien	4
72. Osceola	4
73. Page	3
74. Palo Alto	5
75. Plymouth	2
76. Pocahontas	1
77. Polk	44
78. Pottawattamie	12
79. Poweshiek	4
80. Ringgold	2
81. Sac	2
82. Scott	43
83. Shelby	1
84. Sioux	4
85. Story	7
86. Tama	2
87. Taylor	2
88. Union	1
89. Van Buren	3
90. Wapello	13
91. Warren	2
92. Washington	6
93. Wayne	3
94. Webster	10
95. Winnebago	2
96. Winneshiek	3
97. Woodbury	19
98. Worth	0
99. Wright	5
Sub-Total	591
Illinois	22
Missouri	1
Wisconsin	1
Total	615

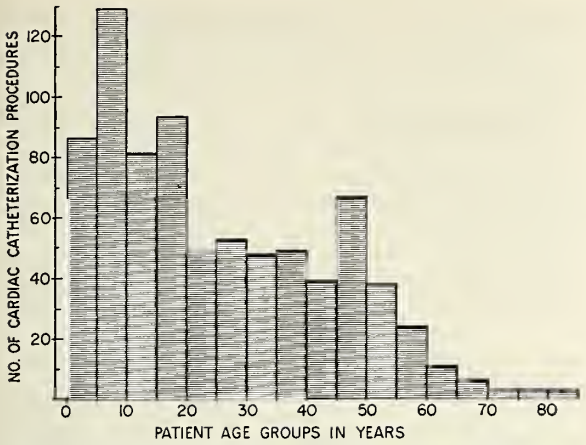


Figure 1. Frequency distribution of 767 cardiac catheterization studies by 5-year patient age groups from January 22, 1951, through January 30, 1957.

Because of the urgent need for this type of diagnostic work, most of the energy of the staff members of the Clinical Cardiovascular Laboratory has been devoted to developing this service function and maintaining its availability. During the past year and a half, Dr. Theilen has been supervising this program in an admirable fashion. For these methods to be effective in producing reliable diagnostic data, the technical procedures have to be executed at a research level of biophysical and biochemical performance. Therefore, as a happy by-product of the service work, the staff has been able, both directly and collaterally, to collect valuable information for research purposes. Moreover, it is our sincere belief that a medical college faculty has a primary obligation to conduct serious investigative work, in addition to providing instruction for medical students and caring for patients as it gives that instruction. Even an excellent clinical teacher finds it difficult to continue being properly critical of new work, informed and stimulating to his students unless he is engaged actively in some research endeavor in the field of his special interest. Furthermore, if medical teachers were to cease doing investigative work, the momentum of medical progress would be lost.

For these reasons, in addition to providing the special diagnostic service, we have endeavored to develop a formal research program in the general cardiovascular field. Inevitably, progress in this area has been slow because of a shortage of space and because of competing demands upon the time of the staff members. We expect that the opening of the new medical research wing at University Hospitals will help considerably toward solving our space problem. Despite these handicaps, we already have been able to undertake primary investigative projects in general hemodynamics, pulmonary circulation and function, renal circulation and electrolyte metabolism, splanchnic circulation and hepatic metabolism, venous tone and blood volume shifts, and the effect of estrogens on the blood coagulation mechanism in relation to atherogenesis. Each member of the staff of the cardiovascular laboratory is involved in one or more of these projects. In addition to the basic aim of contributing new knowledge, these research efforts which supplement the diagnostic activities provide the professorial staff members a means of training instructors and resident physicians in the methods of clinical physiology and in the modes of approach to investigative problems. The attitudes which combine to form a philosophy of research are somewhat different from those which make up a philosophy of clinical practice, although the two are related. The only way in which they can be acquired and understood is through actual laboratory experience. In addition to the opportunity of guiding young professional staff members along these new pathways, the professorial personnel have the perennial responsibility of training and supervising relatively inexperienced laboratory technicians, for the working force available in a university community is a transient one. Our experience with the young professional trainees has been especially rewarding. After contributing notably to the satisfaction and success of our work in Iowa City, they have scattered in various directions and have settled in university or clinic positions, or in specialty practice, from Sheffield, England, to Everett, Washington, Portland, Oregon, and Sacramento, California, on one axis, and from Stevens Point, Wisconsin, to Tulsa, Oklahoma, Columbia and St. Joseph, Missouri, and Cincinnati, Ohio, on the other.

Because of the variety of their activities and needs, the Cardiovascular Research Laboratories have received support from a number of sources, including state agencies, federal agencies, voluntary health associations and national foundations. The breadth of this support has included staff salaries, fellowships and stipends, utilities and custodial service, general maintenance and operation, purchase of expensive and specialized equipment, and aid for specific research projects. The staff is grateful to the University Hospitals and College of Medicine of the State University of Iowa, the Iowa State Department of Health, the Iowa Tuberculosis and Health Association and various of its county components, the Iowa Heart Association and several county heart committees, the American Heart Association, the Rockefeller Foundation, the Life Insurance Medical Research Fund and the National Heart Institute of the Public Health Service.

Plan to attend the Annual Meeting of the Iowa State Medical Society, April 28-May 1, 1957, in Des Moines.

Results From the Surgical Treatment Of Mitral Stenosis

L. E. JANUARY, M.D., GEORGE N. BEDELL, M.D., ERNEST O. THEILEN, M.D., AND JOHN B. WILD, M.D.

IOWA CITY

EXPERIENCE WITH THE surgical treatment of mitral stenosis at the State University of Iowa Hospitals concerns 205 patients from May, 1951, through December, 1956, in whom the lesion was considered operable. There were 44 men and 161 women between the ages of 11 and 60 years. Every effort was made preoperatively to exclude all patients with any contraindication to mitral valvuloplasty. Nevertheless, on the basis of the surgeon's impression by digital examination at cardiotomy, we had underestimated the extent of coexisting mitral regurgitation in 21 patients. In one instance, calcification of the left auricular wall was far more extensive than had been estimated preoperatively, and the surgeon could not make the approach for cardiotomy safely through either the auricle or a pulmonary vein. Thus, mitral valvuloplasty was performed upon 183 patients with pure or predominant mitral stenosis, mostly by the finger-fracture technic. The majority were greatly disabled, functional Class III patients (Table I), although a significant number fell into Classes II and IV.[1] A single Class I patient was treated because of the history of an embolic accident.

TABLE 1

205 PATIENTS: PREOPERATIVE FUNCTIONAL CLASSIFICATION[1]

Group	*Number of Patients*
I	1
II	47
III	140
IV	17

Auricular fibrillation often is an index of an advanced state of rheumatic heart disease. It is evident from Table 2 that there was a significant frequency of this arrhythmia in our series. In more than one third, auricular fibrillation had been established before operation. An additional 30 patients developed paroxysmal auricular fibrillation or flutter postoperatively. Eight of these patients subsequently relapsed to chronic auricular fibrillation after varying periods of time. Eight patients with a preoperative sinus rhythm promptly developed chronic auricular fibrillation after operation. Spontaneous restoration of sinus rhythm occurred after operation in only one patient who had had chronic auricular fibrillation beforehand. We have been conspicuously unsuccessful in restoring sinus rhythm in patients who have auricular fibrillation before operation.

Dr. January is a professor of medicine, and Drs. Bedell, Theilen and Wild are assistant professors of medicine at the SUI College of Medicine.

TABLE 2

205 PATIENTS:* CARDIAC MECHANISM

Preoperative	*Postoperative*	*No. of Patients*
Sinus Rhythm	Sinus Rhythm	85
Sinus Rhythm	Paroxysmal Auricular Fibrillation	19
Sinus Rhythm	Paroxysmal Auricular Flutter	3
Sinus Rhythm	Paroxysmal Auricular Fibrillation and later relapse to Chronic Auricular Fibrillation	7
Sinus Rhythm	Paroxysmal Auricular Flutter and later relapse to Chronic Auricular Fibrillation	1
Sinus Rhythm	Chronic Auricular Fibrillation	8
Chronic Auricular Fibrillation	Chronic Auricular Fibrillation	84
Chronic Auricular Fibrillation	Sinus Rhythm	1

*Because three patients underwent reoperation, the total of operations was 208.

COMPLICATIONS

There were no operative complications in 145 patients (70 per cent). A transient fall in blood pressure occurred rather frequently (Table 3), but

TABLE 3

205 PATIENTS: OPERATIVE COMPLICATIONS

Cardiac	
Rhythm Disturbances	
Supraventricular Tachycardia	1
Ventricular Tachycardia	2
Ventricular Fibrillation	3
Idioventricular Rhythm	1
Cardiac Arrest (Asystole)	5
Production of Significant Mitral Insufficiency	7
Severe Hemorrhage from the Auricle	5
Hemopericardium (requiring a second operation)	2
Acute Myocardial Infarction	1
Total	27
Vascular	
Embolic Accidents	
To arm	1
To brain	9
To bifurcation of aorta	4
Total	14
Pulmonary	
Pulmonary Edema	1
Miscellaneous	
Fall in Blood Pressure during Operation (30-40 mm. Hg. or more)	40
No Operative Complications	145

it was not a significant complication. Only in a few instances was severe and prolonged hypertension associated with excessive blood loss from the auricle or with major cardiac arrhythmias. Multiple, often multifocal, ventricular premature beats occurred during intracardiac manipulation, but they usually disappeared when the exploring finger was removed. Short runs of ventricular tachycardia were not uncommon. The rhythm disturbances listed in Table 3 are those which persisted for several minutes or more and required active measures for the restoration of a normal sinus rhythm.

Cardiac arrest terminated in death in two of five cases. Ventricular fibrillation occurred three times, but it was possible to restore a normal sinus rhythm in one of these patients.

Significant mitral insufficiency resulted from the operation in seven cases (3 per cent), and hemopericardium that required secondary operation for its control occurred twice. Fourteen patients had embolic accidents at operation, presumably from dislodged auricular thrombi or calcific valvular plaques. Several large systemic emboli were successfully removed by embolectomy.

Operative death (Table 4) occurred in eight patients (4 per cent), it being the result either of arrhythmias incompatible with life, severe cardiac failure or cerebral emboli. Both deaths from cardiac failure were the result of increased mitral insufficiency. One of these was caused by rupture of a chorda tendinae and tear of a valve leaflet.

TABLE 4

205 PATIENTS: OPERATIVE DEATHS

Cardiac	
Rhythm Disturbances	
Ventricular Fibrillation	2
Cardiac Arrest	2
Cardiac Failure Secondary to Increased Mitral Regurgitation (9 days and 8 days post-operative)	2
Vascular	
Cerebral Embolus (2 days and 3 days post-operative)	2
Total	8

One hundred ten patients have had a completely smooth course, with no postoperative complications. The minor and major postoperative complications are grouped into several categories and listed in Table 5. It is to be emphasized that many of the complications are not specific for mitral valvuloplasty. They occur also after thoracotomy for other purposes.

The most frequent postoperative complications are either paroxysmal auricular fibrillation or flutter with successful reversion to sinus rhythm; or paroxysmal auricular fibrillation with either the early establishment or the later development of chronic auricular fibrillation. Cardiac failure either appeared or was intensified in 14 patients, and the low-salt syndrome complicated the course of two patients. Four patients have restenosed their mitral valves. Of them, one was discovered at

TABLE 5

205 PATIENTS: POST-OPERATIVE COMPLICATIONS

Cardiac	
Rhythm Disturbances	
Paroxysmal Auricular Fibrillation	19
Paroxysmal Auricular Fibrillation and later relapse to Chronic Auricular Fibrillation	7
Chronic Auricular Fibrillation	8
Paroxysmal Auricular Flutter	3
Paroxysmal Auricular Flutter and later relapse to Chronic Auricular Fibrillation	1
Cardiac Failure	
Transient	5
Increased over preoperative status	9
Low-Salt Syndrome	2
Restenosis of Mitral Valve	4
Total	58
Vascular	
Embolic Accidents	
Extremities	2
Central nervous system	4
Pulmonary Infarcts (small)	4
Thrombophlebitis	4
Total	14
Pulmonary	
Significant Pleural Effusion	9
Pneumothorax	1
Atelectasis	5
Total	15
Infections	
Reactivation of Rheumatic Fever	2
Subacute Bacterial Endocarditis	2
Staphylococcus Septicemia	2
Total	6
Miscellaneous	
Jaundice	1
Psychosis (transient in one)	2
Severe Incisional Pain	4
Post-valvuloplasty Syndrome	6
Penicillin Reaction	1
Fever (cause not determined)	1
Bursitis (subdeltoid, left)	1
Quinidine Sensitivity, Thrombocytopenic Purpura, Massive GI Bleeding Requiring Transfusions	1
Total	17
No Postoperative Complications	110

autopsy, and the other three have been diagnosed and confirmed by reoperation. The latter are currently doing well.

Late arterial embolic accidents have occurred in six patients (2.9 per cent). Thirty patients (14.5 per cent) in this series had had one or more embolic accidents preceding operation. Small pulmonary infarcts occurred in four, and thrombophlebitis in four patients. Significant and recurring pleural effusion which eventually clears has occurred in nine patients. We have seen "reactivation" of rheumatic fever in only two patients. Two patients have developed bacterial endocarditis, and two staphylococcus septicemia.[2]

The "postvalvuloplasty syndrome"[3] has occurred in six patients. We prefer this descriptive term despite the temptation to conclude that the complication represented reactivation of rheumatic fever. The complication is characterized by the onset, after a latent period of anywhere from one to many months, of chest pain and fever, sometimes combined with congestive heart failure, muscle aches, arrhythmias, profuse diaphoresis and mental depression. The chest pain may be severe and diffuse, and may be aggravated by respiration and body movements. The temperature may rise to 104°F. In our patients, the syndrome has been

shortlived, usually lasting no longer than 10 days, although a sense of well-being may not return for several weeks. Four of these patients received no anti-rheumatic drugs. Two received salicylates for a short period. All recovered, some after more than one attack, but the complication did not appear to affect the ultimate result.

One patient developed a rare complication of sensitivity to the quinidine[4] which was prescribed to restore paroxysmal auricular fibrillation to normal sinus rhythm. Her sensitivity became manifest by thrombocytopenic purpura and massive gastrointestinal bleeding that required many transfusions. She recovered fully from that episode and appears to be doing well at the present time. Sinus rhythm was restored by the quinidine and has persisted without further medication.

At the time of a follow-up of these 205 patients, 16 (7.8 per cent) had died subsequent to operation. The causes of death are listed in Table 6 and require little comment. In regard to cardiac

TABLE 6

205 PATIENTS: POST-OPERATIVE DEATHS

Cause	*Number*	*Time after Operation*
Cardiac		
Cardiac Failure	8	(3 weeks to 22 months)
Aortic Valve Disease plus Cardiac Failure	2	(21 months, 30 months)
Ball Valve Thrombus in Left Auricle plus Restenosis of Mitral Valve	1	(8 months)
Vascular		
Embolic Accidents		
Peripheral Systemic	2	(13 days, 2 months)
Central Nervous System	1	(2 months)
Infectious		
Staphylococcus albus septicemia	2	(2 months, 2 months)
Total	16	

failure, it must be emphasized that although relief of mitral block lessens the stress on the myocardium, it does not restore normal function to muscle that has already been extensively damaged.[5] Also, one must remember the possibility that a successful mitral valvuloplasty may unmask what later proves to be a significant aortic stenosis.

FUNCTIONAL STATUS

The present functional status of 179 patients followed six or more months after operation is shown in Table 7. There are no wholly satisfactory clinical or physiologic criteria for evaluating the result. In approaching this problem, we have considered the fact that all patients were ill preoperatively, the vast majority having reached the stage at which cardiac drugs and other measures were necessarily in use. Consequently, we did not consider it essential for an excellent result that patients no longer require any cardiac medication. Instead, the result is classified as "excellent" if the patient has been restored to a normal productive life without significant limitations. Sixty-nine patients (28.5 per cent) fulfill that criterion. The 42 patients in the "improved" group (23.5 per cent) fall short of that goal, but the progress of their symptoms has been arrested, and they have many fewer limitations than formerly. Thus, beneficial results have been achieved in 62 per cent of this group of 179 patients, or 71 per cent of those on whom adequate follow-up information is available. Seventeen (9.5 per cent) were not improved, and eight (4.5 per cent) were worse. Seven patients (4.0 per cent) had died as a result of surgery and 13 (7.0 per cent) had died at varying lengths of time after surgery. Twenty-one patients have failed to return for evaluation. The changes in functional classification of these patients are shown in Table 8.

TABLE 7

PRESENT FUNCTIONAL STATUS: 179 PATIENTS OPERATED PRIOR TO JULY 1, 1956, AND FOLLOWED FOR 6 MONTHS OR LONGER

Patient's Condition	*No. of Patients*	*% of Total*
Excellent	69	38.5
Improved	42	23.5
Unimproved	17	9.5
Worse	8	4.5
Operative Deaths	7	4.0
Dead Subsequent to Surgery	13	7.0
No Follow-up	21	12.0
Restenosis (Reoperated and Followed less than 6 Months)	2	1.0

TABLE 8

CLASSIFICATION OF PATIENTS: PREOPERATIVE AND POSTOPERATIVE

Preoperative Status			*Postoperative Status*			
Class	*Number*	*Not Classifiable**	*Class I*	*Class II*	*Class III*	*Class IV*
I	1		1			
II	40	6	24	8	2	
III	122	28	28	45	18	3
IV	16	9		3	2	2

*Includes operative and postoperative deaths and patients not adequately followed.

CONCLUSIONS

The purpose of this discussion has been merely to report the results of surgical treatment of mitral stenosis at the State University of Iowa Hospitals, and further elaboration is unnecessary here. But the general problem of mitral stenosis has not been touched upon, and a few additional remarks are therefore in order.

Our results are in close agreement with the experience of others,[6,7,8,9,10] and the lasting benefits to properly selected patients appear to be substantial. It is gratifying to us that our results with a larger group of patients followed for a longer time are now essentially the same as those which we reported earlier on a smaller group.[11] The overlapping contributions of associated mitral insufficiency, aortic insufficiency or aortic stenosis

to the total effect of the disease is no less a problem now than it was in the beginning. Multivalvular lesions must be taken into account in determining operability, and a severe strain is thus put upon clinical judgment and upon the present technics of examination. Perhaps direct left-auricular catheterization will prove to be a valuable procedure for excluding some patients from consideration for mitral valvuloplasty. Indeed some must be excluded until such a time as mitral insufficiency and aortic valvular lesions can be surgically treated with greater success than is now the case. We have little enthusiasm for the current surgical procedures for treating the latter lesions.

The ideal candidate for mitral valvuloplasty continues to be the patient with pure or predominant mitral stenosis whose disease has shown unmistakable signs of progression leading clearly to functional Class II. He does not need operation before that time; he does afterward, and before the more serious signs of downhill progress have appeared. He needs to be considered when the problem is mitral block, not myocardial failure. Embolic accidents can serve as an additional indication.

The pathologic status of the mitral valve as found by the surgeon at the time of operation will in general determine the adequacy of the valvuloplasty, but it cannot be foretold in advance. The risk of subsequent restenosis of the valve would appear to be small.

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Blank Hospital Annual Meeting

Following is the program for the first annual meeting of the Raymond Blank Memorial Hospital Association, which is to be held on Saturday and Sunday, April 27 and 28, immediately before the ISMS annual meeting. Except for the banquet, the sessions will take place in the Playroom at the hospital, 14th and Pleasant Streets, Des Moines. The registration fee will be $15.

Saturday, April 27, 1957

9:00 Registration and General Announcements

9:15 "Mortality in Congenital Heart Disease in Patients Under One Year"—Dr. John Gustafson

9:45 "Rheumatoid Diseases"—Dr. Charles May, professor of pediatrics, State University of Iowa

10:30 Intermission

10:45 "Acute Renal Tubular Necrosis in Children"—Dr. John Mitchell

11:30 "Thyroid Physiology, Normal and Abnormal, and Its Relation to Congenital Goitrous Cretinism"—Dr. Robert Blizzard

12:30 Lunch, served by the Raymond Blank Hospital Guild, in the fourth-floor conference room at Iowa Methodist Hospital. Charge—$1.00

2:00 "Blood Ammonia Levels in Liver Disease of Children"—Dr. John Anderson, professor of pediatrics, University of Minnesota

3:00 "Atypical Tuberculous Cervical Adenitis in Children"—Dr. John Green

3:30 Intermission

3:45 "Tyrosin in Childhood Allergy"—Dr. Gordon Manson

4:45 "Hemolytic Disease in Prematures"—Dr. Jack Spevak

7:00 Social Hour and Banquet—Grand Ball Room, Hotel Savery, Des Moines. Charge—$4.50 per plate

Sunday, April 28, 1957

9:00 "Role of the Private Hospital in Pediatric Education"—Dr. Lee Forrest Hill

10:00 "Gonadal Dysgenesis and Hermaphrodism"—Dr. Lawson Wilkins, professor of endocrinology, Johns Hopkins University

10:45 Case Presentation

The Evaluation of Patients With Cardiac Septal Defects

E. O. THEILEN, M.D., AND JOHN W. ECKSTEIN, M.D.

IOWA CITY

ONE OF THE MORE difficult problems which the general physician or pediatrician encounters is the evaluation of children with heart murmurs, particularly when the children appear well and when there is no other objective evidence of heart disease. The problem is somewhat different in the cyanotic child with a heart murmur, in whom an intracardiac shunt can be assumed to be present. Accurate anatomic diagnoses usually can be made with readily available diagnostic procedures. At the present time, surgical procedures are not available for septal defects associated with some of the more complicated lesions, such as transposition of the great vessels or truncus arteriosus.

This discussion will emphasize less complicated defects of the cardiac septa which often are not associated with cyanosis. Isolated atrial and ventricular septal defects are less spectacular than are some of the lesions associated with cyanosis, but they are more common. They are not all harmless, however, and they may indeed be a serious threat to a normal life expectancy.

Because of the advances in treatment which have been made during the last decade, the physician who suspects that a child has an uncomplicated cardiac septal defect not only must establish an accurate diagnosis, but also must decide whether or not surgical intervention is necessary or possible. Not every child with a systolic murmur along the left sternal border or at the base of the heart has a cardiac septal defect. Functional murmurs also exist. On the other hand, murmurs of many congenital defects, mild or otherwise, have been dismissed from consideration because the label "functional" has been attached to them.

Whether or not there is a defect that is potentially amenable to surgery can usually be determined rather precisely. The decision concerning the advisability of surgical correction is more difficult. In the present imperfect stage of our knowledge, we do not feel that all patients with potentially correctable defects should be operated upon. Likewise, there are instances in which an excessively high surgical risk may preclude operation even though the patient's life expectancy without correction is very limited. As our own experience and that of others increase, we shall be able to define the indications and contraindictions for surgery more exactly.

Drs. Theilen and Eckstein are assistant professors in the Department of Internal Medicine at the SUI College of Medicine.

ATRIAL SEPTAL DEFECTS

Atrial septal defects are the commonest congenital anomalies of the heart. They vary widely in size, shape and position, and the communications may be single or multiple. Their diameters range from a few millimeters to several centimeters.

The basic physiologic derangement in an uncomplicated atrial septal defect is a shunt from left to right because of a pressure gradient between the atria. Pressure is normally higher in the left than in the right atrium, and although the gradient is not more than a few millimeters of mercury, it is sufficient to permit a shunt of a significant portion of the total volume of left atrial flow. In consequence, the stroke volume of the right ventricle exceeds that of the left ventricle, and the volume of blood flowing through the pulmonary vessels exceeds that flowing through the systemic vessels by an amount proportional to the shunt. In uncomplicated defects, there is no appreciable increase in the resistance to blood flow through the pulmonary circuit early in life, and the increased work load imposed upon the right ventricle results from the increase in the volume of blood that it must pump. Because of this volume load, the right ventricle dilates and hypertrophies. In time, excessive pulmonary blood flow produces pulmonary vascular changes, and pulmonary hypertension develops. The vascular changes proceed slowly at first, but when the pulmonary vascular resistance reaches definitely abnormal levels, the process may be accelerated and even become irreversible. Right ventricular end-diastolic pressure and right atrial pressure rise as a consequence, and when the right atrial pressure exceeds left atrial pressure, the shunt reverses and cyanosis develops. Eventually, right heart failure appears. If pulmonic stenosis is associated with an atrial septal defect, reversal of the shunt can occur without the development of pulmonary arteriolar changes.

Small defects may exist for many years without producing symptoms. Patients with large shunts may develop heart failure early in life because of the volume load on the right ventricle. Others with moderate shunts exhibit poor growth and development, diminished exercise tolerance and recurrent lower respiratory tract infections, but it may be

months or years before congestive heart failure appears. Still others carry sizeable shunts into adult life with few if any symptoms, and heart failure occurs only after the development of severe pulmonary hypertension.

The clinical findings in cases of atrial septal defect depend upon the volume of the shunt. Small shunts may produce only a soft systolic murmur, loudest in the second left intercostal space near the sternum. Large shunts may be associated with relatively loud systolic murmurs in the same area. These murmurs may be caused in part by turbulence from a high rate of flow through a normal pulmonary orifice. Similarly, increased blood flow through the tricuspid valve may produce a diastolic murmur which is heard best low along the left sternal border. As a consequence of an increased right ventricular stroke volume, there is a delay in the emptying of the right ventricle and in the closure of the pulmonic valve. The result is a characteristic wide splitting of the second heart sound in the pulmonary area. Right ventricular dilatation and hypertrophy are associated with prominence of the precordium and overaccessibility of the right ventricular impulse on palpation.

The importance of a careful physical examination in the clinical evaluation of children with atrial defects cannot be overemphasized. The magnitude of the shunt is suggested by the child's growth and development as well as by his exercise tolerance. The extent of increased vascular markings on x-ray examination and of visible pulsations of the vessels in the hilar regions at fluoroscopy—i.e., hilar dance—are good bases for estimates of the volume of the shunt. Pulmonary hypertension is suggested if there is a history of intermittent cyanosis. Changes in the electrocardiogram over a period of time compatible with right ventricular hypertrophy, and rapid attenuation of the pulmonary blood vessels toward the periphery of the lung fields on x-ray examination constitute additional evidence of pulmonary hypertension. Cardiac catheterization is valuable in establishing the diagnosis, for by this means one may detect an increase in blood oxygen saturation in the right atrium compared with that in the vena cavae, or one may succeed in passing the catheter through the defect. Cardiac catheterization is equally important in quantitating the severity of the hemodynamic abnormalities. The level of pulmonary artery pressure can be determined precisely. Reversal of the shunt—i.e., blood flow from the right atrium to the left—can be detected by determinations of arterial oxygen saturation. Significant arterial unsaturation is not always clinically recognizable as cyanosis.

Associated defects such as anomalous pulmonary veins, ventricular septal defects and pulmonic stenosis may be discovered by catheterization. Even precise methods of laboratory diagnosis such as cardiac catheterization are fallible, however, and the data so obtained must often be correlated with the clinical findings.

Not all patients with atrial septal defects require closure of their defects. Notable among such individuals are those in whom the only significant finding at examination is a murmur, and in whom no evidence of cardiac enlargement or increased pulmonary flow can be demonstrated. Cardiac catheterization need not be done in very small children under these circumstances, but the need for periodic follow-up examinations must be emphasized, even if the heart size is normal and the pulmonary vasculature is not increased. Significant changes from the normal have been observed after as short a time as one year.

If catheterization is done and the studies reveal relatively normal pulmonary artery pressures and only a small shunt, surgery is not necessarily indicated. All patients with shunts of half or more of the total left atrial flow are potential candidates for operation. Excessively high pulmonary artery pressure, particularly in association with a small left-to-right shunt or with a reversal of the shunt, contraindicates closure of the defect, for rapidly progressive right ventricular failure often follows closure in such a patient. Since pulmonary hypertension usually develops rather slowly in atrial septal defects, surgery is seldom urgent in children. Operation can often be postponed until the child is five or more years of age, but the increasing dangers of pulmonary hypertension in young-adult life make procrastination beyond the second decade inadvisable.

VENTRICULAR SEPTAL DEFECTS

The uncomplicated ventricular septal defect is one of the commoner congenital malformations of the heart. Ninety per cent of ventricular septal defects are located in the membranous portion of the interventricular septum, beneath the aortic valve or adjacent to the medial leaflet of the tricuspid valve. Defects of the membranous septum are often associated with significant hemodynamic abnormalities; defects in the muscular portion of the septum are usually small and benign.

When ventricular septal defects are present, the right ventricle and the pulmonary circulation not only are subject to an increased volume load because of the pressure differential and the shunt from left to right, but also are subject to higher pressures. Pulmonary hypertension and pulmonary vascular changes tend to appear earlier than with atrial defects. Up to a point, the increased pulmonary vascular resistance plays a protective role. A very large defect and normal pulmonary vessels would offer less resistance to blood flow than would the systemic arteries. In the absence of an elevated pulmonary vascular resistance, excessive quantities of blood would be recirculated through the pulmonary circuit at the expense of the systemic output. The increased pulmonary vascular

resistance limits the shunt, helps to maintain an adequate systemic flow, and prevents flooding or engorgement of the pulmonary capillaries. Since the pulmonary hypertension usually is progressive, the point may be reached at which the pulmonary resistance is sufficient to produce right heart failure or a reversal of the shunt. This is the usual situation in the so-called Eisenmenger's syndrome, which often is nothing more than a ventricular septal defect with a right-to-left shunt resulting from an increased pulmonary vascular resistance. The concept of resistance to pulmonary flow is also useful when one considers the tetralogy of Fallot. Whether or not a right-to-left shunt and cyanosis occur in this ventricular defect with infundibular pulmonic stenosis depends largely upon the degree of obstruction in the pulmonary outflow tract, rather than upon an anatomic overriding of the aorta.

Pulmonary hypertension and increased pulmonary vascular resistance are the result of several factors. Heavy-walled, muscular pulmonary arterioles of the fetal type may develop independently of the cardiac lesion. The most widely held opinion, however, is that medial hypertrophy in the pulmonary arterioles is the result of increased pulmonary flow or of increased pressures transmitted from the left ventricle. These changes do not occur when the pulmonary vessels are "protected" by pulmonary stenosis. In long-standing pulmonary hypertension, there are degenerative vascular changes not unlike those in the systemic circulation. Intimal thickening, atheromatous deposits and arteriolar occlusions develop, producing still further increases in pulmonary artery pressure and accelerating the degenerative changes. At this stage, the process may be irreversible.

The ventricular septal defect is a more serious threat to life in infancy than is the usual type of atrial defect. Approximately half of the deaths attributable to this lesion occur during the first two years of life. Many children with this lesion succumb before reaching six months of age. Although pneumonia occurs with increased frequency in these children, death usually results from cardiac failure. If children with ventricular defects large enough to produce symptoms survive the first few years of life, it is not unusual for them to experience considerable improvement in growth and development as well as in cardiac reserve. Then, they may be asymptomatic until their hearts can no longer compensate for the gradually increasing pulmonary hypertension. Subacute bacterial endocarditis is a threat even in children with dynamically insignificant lesions.

The only manifestation of a small defect may be a loud, blowing systolic murmur heard best in the third and fourth left intercostal spaces at the parasternal line. Children with defects which permit significant shunts may have a gracile habitus and bulging of the precordium not unlike that seen in patients with atrial septal defects. One may find right ventricular overactivity as well as a forceful apical thrust. Pulmonary hypertension is suggested by an accentuation of the pulmonic second sound. In addition to the systolic thrill and murmur at the left sternal border, apical diastolic murmurs are rather common. These diastolic murmurs probably are the result of rapid flow through the mitral valve. High-pitched diastolic murmurs along the left sternal border have sometimes been thought to result from an insufficiency of the pulmonary valve, but many actually are the consequence of an aortic insufficiency. A ventricular septal defect which lies immediately beneath the aortic ring may leave a cusp of the aortic valve unsupported, and permit reflux from the aorta into the ventricle during diastole. Such diastolic murmurs in association with the systolic murmur may be misinterpreted as representing a patent ductus arteriosus.

Because of the greater severity of symptoms, the need for specialized diagnostic procedures such as cardiac catheterization is likely to be more urgent in children with ventricular septal defects than in those with atrial defects. Even if a diagnosis can be made at a very early age, surgical correction is not always possible. Not only is the operation more difficult in the very young because of the small size of the structures, but frequently in critically ill infants, the lesions may be very large and may be associated with other malformations of the heart. The mortality will be high even with the best surgical technics.

Cardiac catheterization is more difficult to perform in very small children, and because of technical difficulties, accuracy and precision in diagnosis may not always be possible. Even if a clinical diagnosis can be made in a very young child, we would suggest that procedures such as cardiac catheterization be deferred if the child is asymptomatic, has no cardiac enlargement, has shown no radiographic evidence of a shunt and has shown no electrocardiographic evidence of ventricular hypertrophy. It is important that such children be followed and reevaluated periodically. Significant changes from the normal can occur within a year. For the same reason, the results of catheterization two or more years earlier should not be relied upon when surgery is being contemplated, for significant changes in pulmonary artery pressures can have taken place in the meantime. Recatheterization should be a part of the reevaluation.

Closure of a ventricular septal defect before the age of four or five years is difficult because of the small size of the patient, and delay may be warranted for this reason. Not all ventricular septal defects require closure. The size and position of the defect are factors of considerable importance in determining the magnitude of the shunt. If the shunt is small and the pulmonary artery pressure is normal, treatment is not indicated. Symptoms of an impaired reserve, cardiac enlargement, in-

creased pulmonary flow and moderate pulmonary hypertension are indications for surgical intervention. Patients with severe pulmonary hypertension or with a reversal of the shunt on this basis generally do not tolerate closure. The ratio of pulmonary artery pressure to systemic pressure is a helpful index in evaluating the risk of surgery. Other criteria such as calculations of the fraction of blood shunted or of pulmonary vascular resistance are not particularly helpful.

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Radiologic Evaluation of Cardiovascular Anomalies Producing Pulmonary Vascular Engorgement

E. F. VAN EPPS, M.D. and L. L. MAHER, M.D.

IOWA CITY

At the SUI College of Medicine, the Department of Radiology is an integral part of the team that evaluates all cardiac patients. The radiologist has kept abreast of the recent advances in the field of cardiology. Whereas in the past, emphasis was placed on the "characteristic" appearance of a heart as related to a specific lesion, either congenital or acquired, today he evaluates abnormalities in blood flow through the lungs, specific chamber enlargements and abnormal pulsations on a physiologic basis. In spite of this physiologic approach to the problem, a correlation of findings must be made with the clinical, electrocardiographic and cardiac-catheterization studies for accurate determination of the specific site of the anomaly. No one member of the team can claim 100 per cent accuracy for his method of examination.

RADIOLOGIC EVALUATION

Our routine method of cardiac evaluation consists of (A) fluoroscopy and (B) radiography. At fluoroscopy, we note (1) movements of the diaphragm, (2) costophrenic angles for fluid and evidence of pulmonary hypertension, (3) activity of the heart beat and of the aorta, (4) size and density of the pulmonary arteries and presence or absence of hilar dance, (5) size of the pulmonary artery trunk and its activity, (6) calcifications within the heart, (7) left atrial enlargement in the right anterior oblique positions, (8) ventricular enlargement, both right and left, (9) atrial enlargements in the left anterior oblique view, and (10) aortic activity. With barium in the esophagus, spot films are taken in the RAO and PA projections. This information is integrated with the radiographic part of the examination.

PA films are taken from both the oblique and the lateral projections, and the routine for their appraisal is similar to that which is used for fluoroscopy. Both parts of the examination are used as the basis for the conclusions that are drawn and the impressions that are given.

There are occasions, however, when angiocardiography and/or retrograde aortography are indicated. We shall limit this discussion to the use that is made of one or both of those technics for the detection of patent ductus arteriosus and for the demonstration of total anomalous venous return. In intracardiac left-to-right shunts, we have used them infrequently.

In order to detect abnormalities, the examiner must be familiar with normality in the heart, lungs and pulmonary vasculature. Variations in pulmonary vasculature and in the cardiac contour occur in patients who have been improperly positioned and who do not breathe deeply. Figure 1 shows the normal heart of an 11-year-old girl as seen in PA and LAO projections. Note the normal pulmonary arteries at each hilum, and note that their peripheral attenuation presents a uniform pattern similar to that of a tree in full leaf.

Figure 2 shows an atrial septal defect (A), a ventricular septal defect (B), and a patent ductus arteriosus (C), all without pulmonary hypertension. From a casual glance at these photographs, most of us would conclude that the lesion producing the changes was the same, since there is no

Dr. Van Epps is professor and head, and Dr. Maher is a staff member of the Department of Radiology at the SUI College of Medicine.

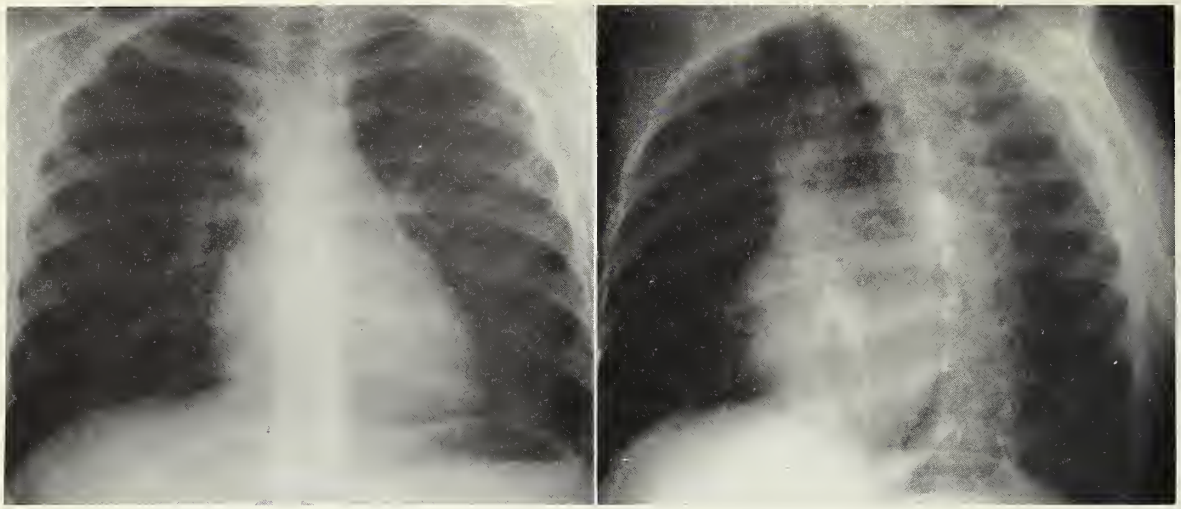


Figure 1. PA and LAO views of the chest of a normal 11-year-old girl. Note especially the size and density of the hilar and pulmonary vessels.

cardiac enlargement, since the pulmonary artery segment is enlarged and since the pulmonary vasculature is increased over the normal. Therefore these pictures demonstrate the futility of employing "characteristic" contours as a diagnostic aid.

Atrial defects vary in size and position, and are described as ostium secundum (usual case type) and ostium primum (low-lying, large and usually with no rim of tissue inferiorly). Most of the latter type cannot be repaired surgically. The shunt from left atrium to right atrium produces the following signs upon which roentgen diagnosis can be based: (1) increased size and density of the pulmonary artery trunk and hilar vessels, and pulsation if the shunt is of any magnitude; (2) right ventricular hypertrophy; (3) right atrial enlargement; and (4) slight left atrial enlargement in some cases.

Ventricular septal defects in the membranous portion vary also in size and location. The same findings are present here as in atrial defects, for they are based upon a left-to-right shunt that overloads the pulmonary circuit. Since the operative correction of these two conditions requires separate surgical procedures, and since roentgen means are not diagnostically specific, cardiac catheterization is needed to identify the site of the shunt.

When a ventricular septal defect is associated with severe pulmonary hypertension, cyanosis may ensue. The condition may be termed an Eisenmenger complex or, better, an Eisenmenger syndrome. Basically, it is a large and high ventricular defect with pulmonary hypertension. The aorta may or may not be overriding.

Patent ductus arteriosus, though not an intracardiac shunt, produces an overloading of the pulmonary circuit and brings about the changes described above. In shunts of sufficient size, there are other changes that aid in the diagnosis. These include increased amplitude of pulsation in the left ventricle and in the aorta (similar to that seen in aortic insufficiency because of the wide pulse pressure) and left ventricular hypertrophy. In infants, retrograde aortography is used for diagnosis because these features are particularly difficult to determine. In the patient shown in Figure 2C, the shunt was so small that only a systolic murmur

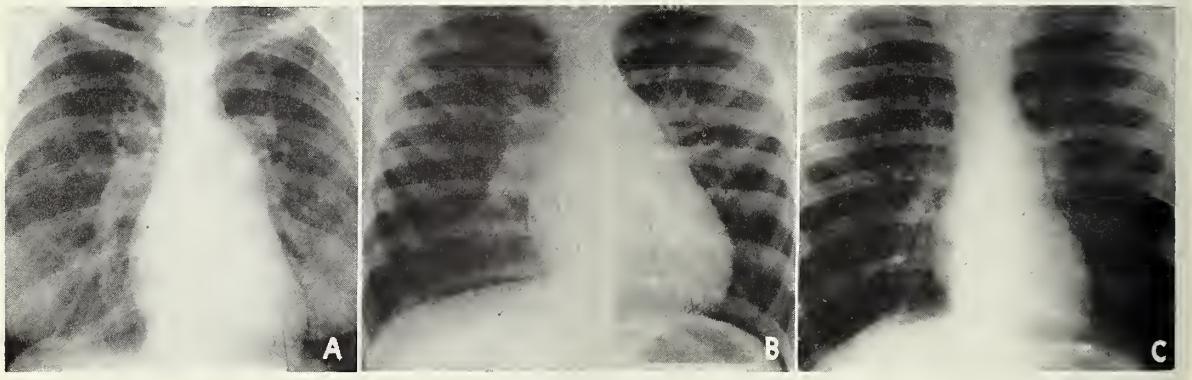


Figure 2. All three cases have left-to-right shunts, but no hypertension in the pulmonary circuit. A. atrial septal defect. B. ventricular septal defect. C. patent ductus arteriosus.

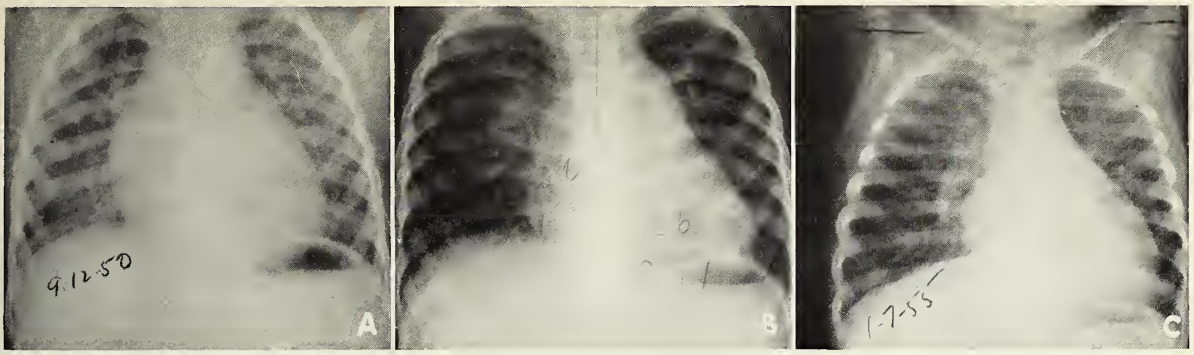


Figure 3. Compare these with Figure 2. These are the same lesions with hypertension in the pulmonary circuit. Note the differences in the attenuation of the vascular radicles in cases with pulmonary hypertension.

was present. We thought there was a small atrial defect, or perhaps a pulmonic stenosis. No left ventricular hypertrophy was revealed either by our examination or by EKG.

The differentiation of these three conditions is further hampered when pulmonary hypertension is present. In Figure 3 the same lesions are present, but in all of the cases there is pulmonary hypertension varying from 53 to 72 mm. Hg., as measured in the proximal pulmonary artery. All have cardiac enlargement, but none is in cardiac failure. Compare Figure 3 with Figure 2 for evidence of increased vascularity and for attenuation of the vascular pattern. Note that the vessels just beyond the hilum in Figure 3 become rapidly smaller, that some are irregular in outline and that the smaller vessels are diminished or absent. The degree of involvement is less apparent in the apices and occasionally in the bases. This pattern has been likened to a pruned tree or to one that has lost its leaves.

Figure 4A shows a retrograde aortogram in a patent ductus with pulmonary hypertension. The contrast medium was introduced into the left common carotid artery under pressure. It passed from the aorta into a large patent ductus, filling the pulmonary arteries and distal aorta. The pulmonary hypertension is graphically demonstrated by the opacification of the vessels. Note the irregularity in the lumens and the rapid attenuation peripherally from the enlarged hilar vessels.

Like other anomalies, cardiac ones may occur singly or in combination. When combined anomalies are present, roentgen evaluation is often incomplete. Such a case is to be seen in Figure 5. Our impression was that the patient had an atrial septal defect, with left-to-right shunt and probable anomalous venous return from the right lung, for we had noted prominent engorged vessels in the right upper lobe. At catheterization, however, a ventricular septal defect was found, with a pulmonary artery pressure of 76 mm. Hg. The findings at surgery were a single ventricle associated with transposition of the vessels, a bicuspid right

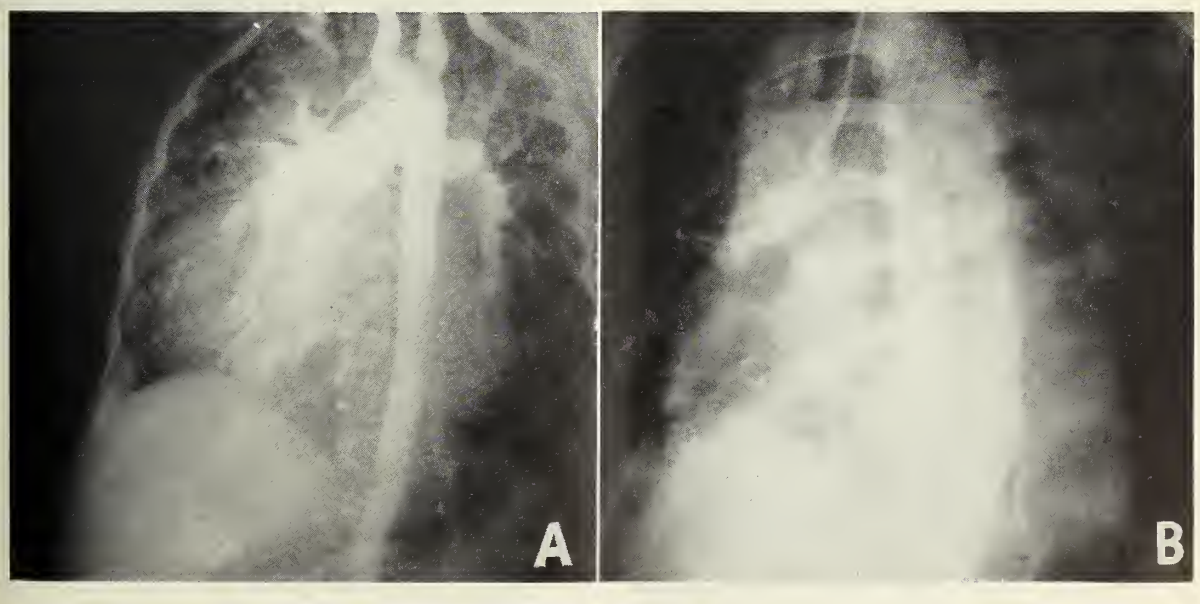


Figure 4. Retrograde aortograms. Patient A has patent ductus; patient B does not.

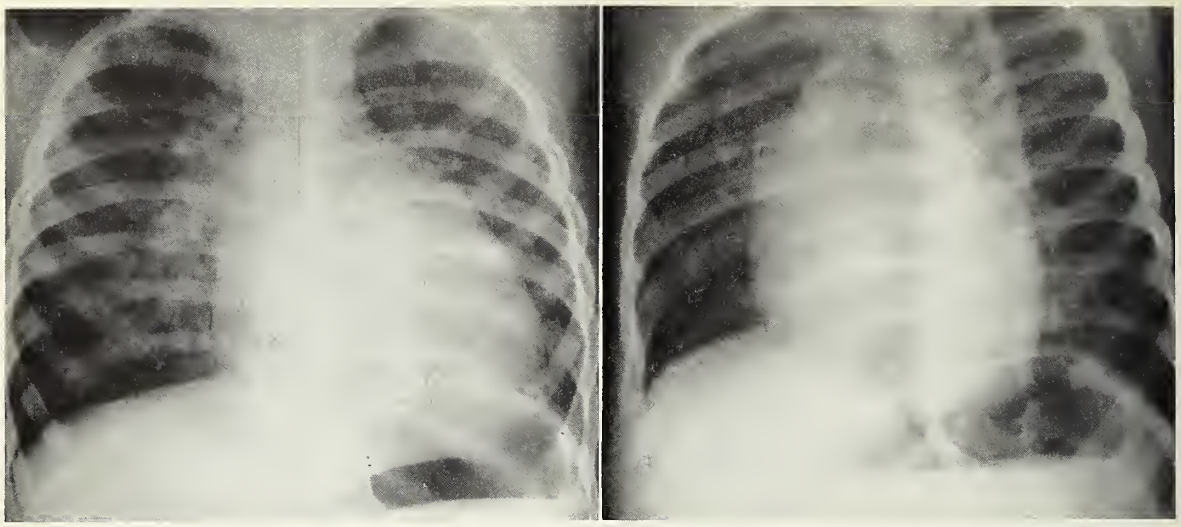


Figure 5. PA and LAO views in a 15-month-old child with no ventricular septum, transposition of the great vessels and pulmonary hypertension. Note the large vessels in the right apex and the evidence of pulmonary hypertension.

atrio-ventricular valve and a tricuspid left atrio-ventricular valve.

Total anomalous venous return is another combined anomaly producing left-to-right shunt with resultant overloading of the pulmonary circuit. In this condition, a septal defect must be present in order to be compatible with life. Previously, we have minimized the diagnostic significance of a "characteristic" contour, but this condition represents an exception, since in our experience the "snowman" contour occurs in no other lesion or combination. Figure 6 shows such a case. Note the "snowman" appearance of the cardiac and mediastinal outline. The increased vascularity of the lung fields, especially on the left, and the large venous channels are visible in Figure 6, but they are best seen in Figure 7, the angiocardiogram. There is evidence of a shunt at the atrial level from right to left, manifested by the simultaneous opacification of the aorta and the pulmonary arteries. In addition, recirculation of the contrast medium is to be seen in the pulmonary circuit.

In contradistinction to a total anomalous venous return, *partial* anomalous venous return may or may not be associated with a septal defect. In either case, all that can properly be said on the basis of roentgen examination is that a left-to-right shunt is present. The site of the defect or the cause of the shunt cannot be determined in most instances. Figure 8 shows a case of anomalous venous return from the right lung to the right atrium. No septal defect is present. Note the similarity between these findings and the ones in the case of an atrial septal defect.

DISCUSSION

We have reviewed the complete records of patients whose catheterization findings during the year 1955 indicated a left-to-right shunt. The study reaffirms both the usefulness and the limitations of roentgen evaluation of cardiac anomalies. Left-to-right shunts are readily recognized unless the shunt is minimal or there are combined anomalies. Determining the localization or level of the shunt, though sometimes possible, is not sufficiently accurate for complete reliance except in the case of patent ductus arteriosus demonstrated by retrograde aortography. In general, angiocardiography is of limited usefulness in the evaluation of left-to-right shunts. We prefer to localize an intracardiac

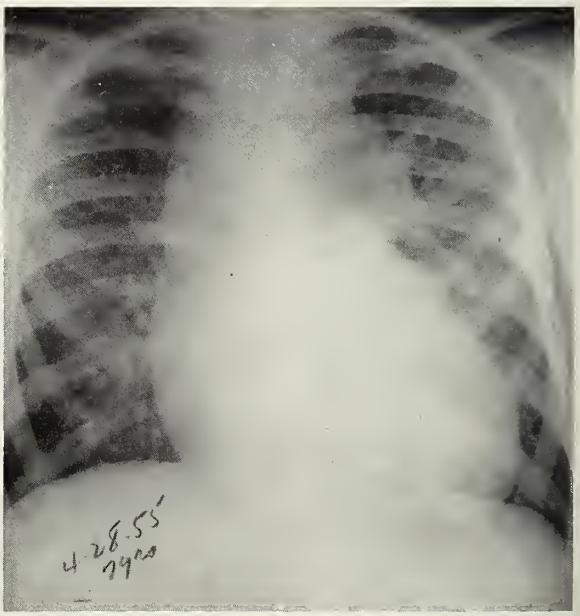


Figure 6. Total anomalous venous return to the superior vena cava, and atrial defect. Note the "snowman" silhouette, the evidence of left-to-right shunt.

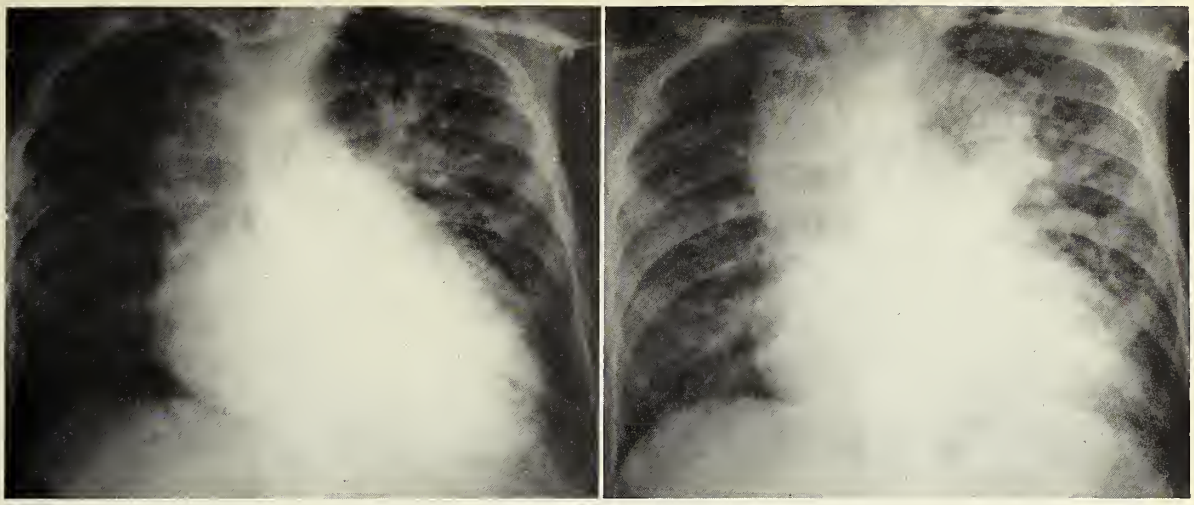


Figure 7. Angiocardiogram of above. Note large anomalous venous channel on the left side, as well as the increased vasculature of the left pulmonary tree.

shunt by cardiac catheterization. Not only the site but also the volume of the shunt can be determined accurately.

The roentgen evaluation of pulmonary hypertension has been a by-product of our experience over the years in the correlating of roentgen, clinical and catheterization data. Its recognition is important, since a severe degree of it may not only reverse a left-to-right shunt, but may be responsible for the death of a patient when the defect is surgically closed.

Finally, correlation of the clinical, electrocardiographic, roentgen and cardiac-catheterization findings will result in greater accuracy of diagnosis than can be obtained from a single procedure. Such correlation occurs in our hospital every Friday afternoon at the Chest Conference, where all the people concerned with a specific patient present their data in a combined effort to solve the problem.

SUMMARY

1. Left-to-right shunts occur in atrial and ventricular septal defects and in patent ductus arteriosus, with or without pulmonary hypertension, and alone or in combination with other anomalies.

2. Left-to-right shunts are readily recognizable by roentgen methods, unless the shunt is minimal.

3. The level of the shunt is less accurately diagnosed, except in cases of patent ductus arteriosus when aortography is done.

4. Of all the lesions that have been described, total anomalous venous return produces the only "characteristic" contour.

5. Pulmonary hypertension can be recognized from the alterations in the attenuation pattern of the pulmonary arteries.

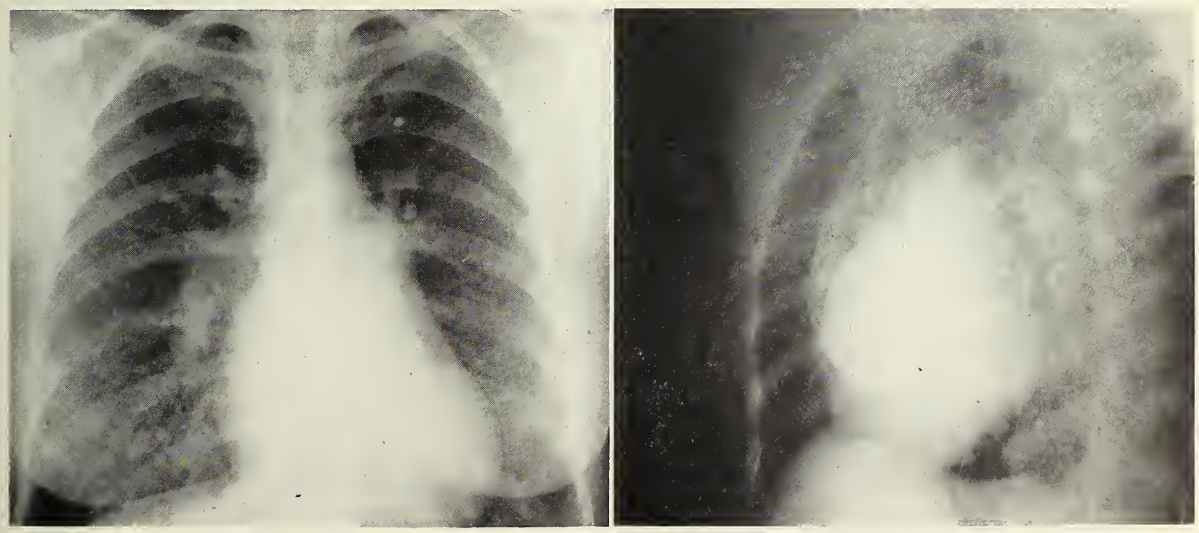


Figure 8. PA and LAO views in case of complete anomalous venous return of the right lung to the superior vena cava WITHOUT a septal defect, either atrial or ventricular.

Anesthesia for Cardiac Surgery 1949-1956

JACK MOYERS, M.D.

IOWA CITY

It is not uncommon for a patient to be deteriorating rapidly because of heart disease on one day, and on the next day to be able to look forward to a rather normal life as a result of cardiac surgery. There is no reason to deny the drama which pervades this field of medicine for it is obvious to all who participate. There is no occasion to detract from the imagination, design, and diligent labors of those who have made advances possible. The fruits of their efforts are fully apparent. There is, perhaps, cause for alarm when the anesthetist joins the team and feels either that his previous experiences will be of little value to him or that he must be guided in his endeavors by an entirely new set of principles.

Surely one must adapt basic concepts and ideas to the many problems which are peculiar to cardiac surgery. However, there is little evidence to show that the pharmacologic properties of anesthetic agents change as one takes them from one operating theater to another, or that cardiac patients constitute a separate phylum. For the anesthetist who has adequately prepared himself to conduct anesthesia safely for patients with respiratory disease or metabolic disturbances, the transition to anesthesia for cardiac surgery will cause little commotion. Rink[1] has most appropriately said, "When faced with a wet and slippery road on a dark night, a first class driver does not alter his techniques in any essential way. He merely redoubles his normal safeguards and precautions. He avoids rapid accelerations and braking, but he reaches his destination very nearly as quickly and safely as he does under good conditions." This thought applies perfectly to anesthesia for surgery of the heart.

PREOPERATIVE EVALUATION

The preoperative evaluation of the patient who is to undergo cardiac surgery is often a difficult task, but always a rewarding one. Many operating-room accidents and misadventures are merely the result of improper study of the patient beforehand. The history of the disease must be known, along with the effects of previous surgery and the administration of depressant drugs. Whether the patient can comfortably assume the supine position should be established, along with his tolerance to an atmosphere of 20 per cent oxygen. If he needs an atmosphere enriched by oxygen on the ward, he should not be denied it on his way to the operating room or at any time during the induction of anesthesia. All available data concerning the patient's disease and its physiologic effects must be studied. Electrocardiographic records and cardiac catheterization reports must be noted and their results appreciated.

It is extremely important that the anesthetist have a complete understanding of the functional deficiency of the circulatory system and, if possible, of the degree or amount by which it is abnormal. Only in this way can he predict the impact of anesthetic agents, technics and operative position on the patient's hemodynamics and oxygenation. It is predictable that the patient with aortic insufficiency will have difficulty in tolerating the hypotension associated with a "crash induction," regardless of the agent used; and belladonna premedication must be used with caution in the patient who has little reserve with which to combat the hemodynamic effects of a tachycardia.

It is likewise obligatory that the anesthetist be familiar with the surgical technic so that he may prepare for the needs of the surgeon and anticipate the changes in the patient which the surgeon desires to make or necessarily must cause as a part of the technic. He must know the steps in the operation at which sudden and severe blood loss can be expected. He must know when an extremely quiet operative field is imperative, and when full pulmonary inflation is allowable.

Many changes in the so-called "vital signs" will occur with enough regularity so that the anesthetist should be prepared to deal with their occurrence before the cause of the changes produces disaster. The hypertension which develops during the repair of a coarctation of the aorta is a good example. The elevated blood pressure becomes more extreme as ligation of large collateral vessels produces an increasing peripheral resistance. During this period, it may be necessary to produce a relatively hypotensive state with one of several dilating agents. With the completion of the anastomosis and the establishment of blood flow through the entire length of the aorta, one must anticipate the possibility of profound hypotension and prevent it by the use of the head-down position, vasopressors and light anesthesia, depending upon the need.

Auricular fibrillation develops with such frequency in the hypothermic patient that it becomes an expected finding. On this occasion, obviously, it is viewed with less concern than if it were to

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develop during the course of a patent ductus ligation. One must acquaint himself with the "normal," so that he can properly identify the variations that indicate impending trouble. There is, perhaps, no other field where the anesthetist must so fully understand the surgical technic and its impact on the patient as in surgery of the heart.

Preoperatively, the anesthetist must be willing to spend time with the patient in an eflort to give him confidence and information. Table 1 shows that most of these patients are under 20 years of age. For this reason, and others, they may be facing their first surgical experience, and have a right to expect the anesthetist to be informative, gentle and patient with their questions. The anesthetist must acquaint himself with the wishes of the patient regarding anesthesia, often agreeing, but many times refusing with an attitude that fully explains and lends confidence. A tactful and comforting pre-operative consultation with a patient will successfully replace many milligrams of barbiturate and opiate before surgery. This holds true for any type of patient, but particularly for the patient with heart disease is the substitution a matter of safety.

TABLE 1

AGE DISTRIBUTION OF PATIENTS UNDERGOING CARDIAC SURGERY FROM JULY 1, 1949 TO DECEMBER 31, 1956

AGE	NUMBER	PERCENT
0–9 years	144	27
10–19 years	165	31
20 and above	224	42
Total	533	100

SELECTION OF ANESTHETIC AGENT

The selection of an anesthetic agent, as always, depends upon the individual merits of various available agents for the particular patient to be anesthetized with regard to the following factors: (1) the safety of the patient; (2) the convenience of the surgeon; and (3) the comfort of the patient. Our selections over the 7½-year period are shown in Table 2, the agent listed being in each instance the main one used. In this field of anesthesia, such non-analgesics as curare preparations, vasopressors and vasodilators find more than occasional utility, and in almost all instances, nitrous oxide was supplemented with intravenous barbiturates and opiates, or their substitutes. It is senseless to deny that there are many differences in anesthetic agents, and certainly one could gather enough good evidence to make an intelligent "pitch" for any one of them as the best agent for a patient with cardiac disease. In the final analysis, however, the anesthetist's familiarity with a given anesthetic agent is undoubtedly its most important credential.

CONDUCT OF ANESTHESIA

The conduct of anesthesia for cardiac surgery requires good communication and great vigilance. Changes in the circulatory efficiency must be observed early, and the surgeon must be informed immediately. In many instances, a surgical maneuver is the cause of an arrhythmia or hypotension, and an equally useful, but less harmful, technic can be substituted. The anesthestist's observation of change in the pulse or color may be the critical factor in decisions concerning the degree or type of surgical repair. The surgeon needs to know the extent to which change has occurred

TABLE 2

PRIMARY ANESTHETIC AGENT USED FOR PATIENTS IN VARIOUS AGE GROUPS

	AGE IN YEARS			
AGENT	0–9	10–19	20 AND OVER	ALL PATIENTS
NITROUS OXIDE	4%	81%	84%	61%
ETHER	85	15	9	32
CYCLOPROPANE	11	4	7	7

and to what the change can be assigned. Minute-to-minute assessment of the patient's condition and accurate recording of observations are obligatory. Abnormal blood volumes and ventilation are unwelcome in any surgical procedure, but in the fragile cardiac patient, they may be especially hazardous. Here, as in all other surgery, it is literally true that the finger of the anesthetist must be on the patient's pulse, and his eye must be on the operative field. Mechanical ventilators, continuous electrocardiographic tracings and other monitors are highly desirable, and must not be decried; but they should complement, not supplant.

POSTOPERATIVE CARE

These patients need diligent care postoperatively. Even slight insults in the form of circulatory overload and momentary asphyxia from airway obstruction must be avoided. Gastric dilation resulting from a misplaced oxygen-therapy catheter, or obstructed or vigorous inspiration is a particular threat. If all members of the surgical team frequently attend and observe the patient, his opportunity for a successful operation is greatly enhanced. One should search for impending complications as if he were the only physician doing so.

THE USE OF HYPOTHERMIA AND THE PUMP-OXYGENATOR

Hypothermia and the use of a pump-oxygenator to by-pass the heart and lungs are special adjuncts that are used chiefly, though not exclusively, for cardiac surgical procedures. Our technic in the use of hypothermia has been discussed previously.[2] We favor rapid cooling by means of ice water immersion, and rapid warming in 48° C. water. There have been no instances in which the rapidity of body temperature change has been observedly injurious. A final operating temperature of 30° C. is the goal. Slower cooling methods may produce this body temperature more exactly, but they are time-consuming and necessarily prolong the duration of anesthesia. Curare preparations and chlorpromazine have been used to control shivering, and the impression has been gained that the vasodilator action of the latter drug allows the blood pressure to be observed more consistently by the auscultation method. We are not impressed by any other beneficial effect of chlorpromazine in these patients.

Anesthesia has been produced by ether or nitrous oxide supplemented by intravenous opiates. When rapid cooling is used, the time consumed in induction of anesthesia, venesection and cannulation, attachment of electrocardiographic limb leads, ice water immersion, and surgical preparation and draping of the operative area is rarely 45 minutes. Rather vigorous ventilation by manual compression of the rebreathing bag has been routine. However, apnea as a consequence of hypothermia has not been observed. On the contrary, all patients have breathed spontaneously at the lowest body temperature attained. Hypothermia appears to reduce the amount of anesthetic agent required, but the great majority of patients required an anesthetic atmosphere throughout the surgical procedure, since they were responsive to pain at temperatures below 30° C.

Ventricular fibrillation has been encountered in 16 hypothermia cases. In all but three instances, defibrillation has been accomplished by manual artificial circulation, electroshock and artificial ventilation with oxygen. In patients in whom attempts at defibrillation were unsuccessful, there were anatomic abnormalities that prevented salvage. We have not relied upon potassium, prostigmine or other drugs for defibrillation. Artificial circulation and ventilation must be continued until the heart is normal in color and size before defibrillation by electroshock is attempted. This may take more than several minutes. We feel it is vital to the salvation of the fibrillating or arrested heart that there be adequate cardiac circulation with blood returning from well-ventilated lungs. There may be auxiliaries, but there are no substitutes.

The patients on whom the pump-oxygenator was used were anesthetized with nitrous oxide and intravenous meperidine and relaxants. Two well-working intravenous infusions are essential—one of them for whole blood and other fluid therapy, and the other for administration of anesthetic drugs, heparin and protamine. The trunk and lower limbs are covered with a warming mattress to prevent hypothermia. When the patient's heart and lungs are by-passed in favor of the pump-oxygenator, artificial ventilation by the anesthetist is stopped, since it accomplishes nothing except a disturbance in the surgical field. Although no gaseous agent is operative during the by-pass period, non-responsiveness prevails as a result of residual intravenous medication and the fact that the output of the pump is less than normal. If the pump were as good a substitute for the heart as the oxygenator is for the lungs, anesthetic concentrations of some agent would have to be added to all blood in the system, both in the pump and in the patient. The return of cardiorespiratory responsibility to the patient has usually been no problem, and at this time nitrous oxide administration and artificial ventilation are resumed, after a short period of maximal oxygenation. Assessment of the hemovolemic state of the patient is made before the pump is abandoned. If the patient is overloaded or in need of blood, adjustment is made by means of extraction or administration by the pump from its reservoir. Heparin is used in 1.5 mg./Kg. doses to prevent clotting while the pump is operating. Later, the action of the heparin is reversed by means of a slow intravenous administration of protamine in doses of approximately 1.8 to 2.0 mg./Kg. As a general rule, no special anesthesiologic talents are needed. To contribute to the procedure successfully, however, one must partici-

pate in an atmosphere that is saturated with communication, meticulous attention to detail and extreme vigilance.

RESULTS

The results of several years' effort and the basis for most of the above observations are shown in Table 3. In almost every instance, the mortality rates are comparable to those usually reported.[3] The mortality rate from cardiac surgery has been around 8 per cent for the past four years. Although lack of improvement in the mortality rate might seem to reflect lack of progress, improvements may have been nullified by ever-expanding and more courageous applications of the surgery.

BY-PRODUCTS

There are by-products of participation on a cardiac surgery team which are not apparent from statistics that refer to cardiac surgery alone. Though in most instances only one anesthetist has been utilized, and therefore only one has profited directly by experience, it is probable that all members of the resident and teaching staff have profited. The novelty of the surgical or anesthetic technic provokes considerable discussion among all who are aware of the operation. In describing what is to take place or what has happened, the actual participant presents the basic considerations in cardiac physiology and reemphasizes certain principles. It

TABLE 3

SUMMARY OF EXPERIENCE IN CARDIAC SURGERY AT STATE UNIVERSITY OF IOWA HOSPITALS, JULY 1, 1949, TO DECEMBER 31, 1956

	49-50	50-51	51-52	52-53	53-54	54-55	55-56	1956 6 mos.	Total Cases	Percent Mortality
Patent Ductus	7 1	14	5	19	22	19	19	5	110 1	0.9
Coarctation of Aorta	1	4 1	7 1	4	8	6 1	9	6	45 3	6.7
Tetralogy of Fallot	6 1	2	4 1	4 1	9 1	8	6 2	2 1	41 7	17.1
Mitral Stenosis		2	19 1	28 1	50 2	42 2	41 2	29 2	211 10	4.7
Constricting Pericarditis		1	1	2		3 1	1		8 1	12.5
Aortic Arch Anomaly			2	4 1	2 2	1		1	10 3	30.0
Pulmonary Stenosis				2	13 1	3	5	6	29 1	3.4
Miscellaneous (Exploratory)				2 1	6 3	7 1	6 3	4	25 8	32.0
Interatrial Septal Defect					2 1	11 2	13 3	11 1	37 7	18.9
Interventricular Septal Defect							1	11 2	12 2	16.7
Aortic Stenosis							2	3 1	5 1	20.0
TOTAL	14 2	23 1	38 3	65 4	112 10	100 7	103 10	78 7	533 44	8.3
Percent Mortality	14.3	4.3	7.9	6.2	8.9	7.0	9.7	8.9	8.3	

Years were computed from July 1 to June 30. Small underlined numbers indicate deaths.

is inevitable, then, that the discussants learn. It is also true that surgical patients being subjected to non-cardiac operations are anesthetized more capably if they are cared for by anesthetists who have been motivated and obligated to participate to a greater or lesser degree in all cases of cardiac surgery. Thus, to a rather full extent, all share in many more experiences than they could encounter on an individual basis in the same length of time.

A second by-product is the fact that patients with heart disease may need operations other than a repair of their defects. Experiences derived from anesthesia for cardiac surgery are no less valuable when the surgeon does an appendectomy or a cesarean section.

Finally, one develops a receptive attitude toward a few years, the efforts of the anatomist, physiologist, internist, hematologist, surgeon, anesthesiologist and many others have enabled in our hospital 11 of every 12 patients to survive operations that previously would have seemed either fantastic or ridiculous.

SUMMARY

Results of 7½ years' participation in anesthesia for cardiac surgery have been presented, and some observations have been made regarding them. Problems peculiar to this field of anesthesia have been presented.

These problems do not demand of the anesthetist new basic concepts, but merely an appropriate application of principles which have been practiced for some time.

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30,000 MORE SAVED FROM CANCER ANNUALLY

TODAY: 1 IN 3 SAVED



10 YEARS AGO: ONLY 1 IN 4 SAVED



Early detection and prompt treatment are steadily increasing the number of Americans saved from cancer each year. Now about 150,000 Americans will be saved each year from among the 450,000 who get cancer annually.

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Surgical Correction of Atrial and Ventricular Septal Defects

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IOWA CITY

THE DEVELOPMENT and common use of new physiologic methods in the diagnosis of congenital heart disease and the perfection of new surgical technics have opened an ever-expanding frontier in the field of cardiac surgery. Dramatic improvement can now be achieved in many patients who otherwise would have been doomed to prolonged invalidism and, in some cases, premature death.

PHYSIOLOGY

Defects of the atrial and ventricular septa and their variations are the commonest of all congenital heart lesions. Occasionally one sees patients who will live a normal life span with either one of those congenital anomalies, but the vast majority will develop progressively severe cardiac difficulties in childhood and early adult life. In both atrial and ventricular defects, blood is shunted from the left side to the right side of the heart, decreasing the systemic arterial flow. The flow of shunted blood through the right side of the heart is markedly increased, and the pulmonary artery flow may be two or three times that of the systemic cardiac output. The ultimate result may be a progressive pulmonary artery hypertension leading to cardiac failure and death. Uncomplicated defects produce predominantly left-to-right intracardiac shunts. Bidirectional intracardiac shunts may be present in some patients having low-lying interatrial septal defects of the ostium primum type, or in patients with common atrioventricular canals. Associated pulmonic valvular stenosis, which is present in about 25 per cent of all interatrial septal defects, will cause bidirectional and often predominantly right-to-left intracardiac shunts and desaturation of the peripheral arterial blood.

Interventricular septal defects are often associated with varying degrees of muscular infundibular stenosis, and at times with the valvular pulmonic type. In some instances, the aortic outflow tracts are also in an anatomic location favoring direct shunts of blood from the right ventricular cavity into the peripheral systemic stream. In those instances, a mild to severe peripheral arterial desaturation results.

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In all congenital heart lesions which impose an increased load upon the right ventricle due to blood shunts either at the atrial or at the ventricular level, the most important common denominator is the pressure within the pulmonary arterial tree. The changes in the media of the peripheral pulmonary arterioles may be relatively slow in development. Such is the case as regards interatrial septal defects, which impose an increased load upon the right side of the heart and upon the pulmonary arterial tree, chiefly because of an increased flow at low pressure levels. Under these circumstances, one doesn't often encounter patients under five years of age who have pulmonary artery hypertension of such a degree as to produce a reduction of the left-to-right interatrial shunt, or even reversal of the shunt at the atrial level.

The left-to-right intracardiac shunts at the ventricular level present a somewhat different physiologic problem. The increased load placed upon the right side of the heart and upon the pulmonary arterial tree depends not only on the increased flow but also on the increased intraventricular pressures. The peripheral pulmonary arteriolar bed is the only point of resistance, and it is exposed to large flows and higher levels of left and right ventricular pressures, depending upon the size and location of the interventricular septal defect. The changes in the media of the arterioles of the pulmonary arterial tree are therefore more striking and more steadily progressive, and they may occur within the first few months or years of life. Children with this type of defect often develop pulmonary arterial hypertension to a degree which approaches systemic arterial levels. Successful closure of the septal defect is frequently precluded. If pulmonary artery pressures finally approximate or exceed left ventricular pressures, the shunt will be bidirectional or reversed, and will lead to the ultimate death of the patient.

One encounters extreme right ventricular pressures associated with bidirectional or right-to-left intracardiac shunts but with low pulmonary artery pressures in some variations of the defects at the atrial and ventricular levels. In those instances, an associated infundibular or valvular pulmonic stenosis protects the pulmonary arterial tree from the ravages of the shunt and right ventricular hy-

pertension. Patients with these variations of the defects, even though they occasionally show severe peripheral arterial desaturation, may be acceptable candidates for surgical correction.

OPEN VS. CLOSED INTRACARDIAC SURGERY

Numerous ingenious methods have been devised for closure of defects at the atrial level, and there are many surgeons today who still prefer the so-called closed or semi-closed technics.[1, 2, 7] Though not all, there certainly are many lesions that can be successfully treated without direct visual control in a bloodless field. It is, however, impossible to decide preoperatively which lesions can be treated successfully by closed methods alone. Associated anomalies, as for instance valvular pulmonic stenosis, can also be managed without direct visualization of the defect. But we have never used closed methods, and have always felt that in this as in all other types of surgery, direct vision in a bloodless field is desirable. Correction of defects at the ventricular level and their variations could never be approached successfully by blind methods. Open ventriculotomy and closure of the defect under direct vision in a relatively bloodless field is essential to a successful outcome.

HYPOTHERMIA FOR DIRECT-VISION CARDIAC SURGERY

Our efforts have ben primarily directed toward the experimental perfection and clinical use of two methods which will permit open, direct-vision intracardiac surgery applicable to all lesions. Both of these methods must fulfill the following criteria: (1) they must permit adequate exposure in a bloodless field; (2) the method must not severely limit the time that can be taken for repair of the defects; (3) the brain and the other vital organs must be protected from anoxia during the period of open cardiotomy; (4) coronary or peripheral air emboli must be prevented; and, finally, (5) the cardiac mechanism and peripheral circulation must be restored to normality following the repair of the defect. Either generalized body hypothermia or the use of an extracorporeal circuit with a pump-oxygenator in normothermic patients has given us an opportunity to fulfill the above mentioned criteria. The choice of method depends upon the type of lesion to be treated.

Generalized body hypothermia and temporary occlusion of all inflow and outflow tracts of the heart, and temporary cessation of the peripheral systemic circulation permit the repair of most lesions at the atrial level by open cardiotomy. There also can be direct visual correction of defects of the aortic and pulmonic valves.[9, 11] But one cannot successfully utilize such technics when he undertakes the correction of certain types of intraatrial lesions, as for instance the ostium primum type of defects, common atrioventricular canals or other more complicated anomalies. Careful preoperative evaluation by means of physical findings, electrocardiographic tracings, cardiac fluoroscopy, cardiac catheterization and, occasionally, roentgenologic visualization of the cardiac chambers and large vessels by means of contrast media should make it possible to sort out the lesions which cannot be approached with the use of hypothermia.

We feel that an extracorporeal circuit and a pump-oxygenator should be reserved for use in procedures which necessitate open ventriculotomy for the correction of intraventricular anomalies, or in procedures—intraatrial or otherwise—which require more time for repair than can be provided by generalized hypothermia. We realize that at the present time there is a trend in surgical circles toward the use of the extracorporeal circuit and pump-oxygenator in practically all types of intracardiac surgery for congenital and some acquired lesions, and even in the correction of as simple a defect as an isolated pulmonic valvular stenosis. But to us it appears unnecessary to use this method for lesions that can be corrected by much simpler means.

To date, total body hypothermia has been used at the University Hospitals in 61 patients with various anomalies. As primary lesions, 39 patients of this group had either an ostium secundum type interatrial septal defect or a complicated interatrial defect or variations thereof. In a previous article in the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY,[6] we discussed the different classifications of the anomalies, and reviewed the results we had obtained up until about a year ago. We divided the interatrial septal defects into three groups.

The Ostium Primum Defect. This lesion is situated just above the rings of the mitral and tricuspid valves. The lower border of the defect is formed by the rim of the fibrocartilaginous tissue at the junction of the two valves. There may or may not be associated anomalies of the tricuspid and mitral leaflets. The other parts of the septal margins may be partially present, or they may be completely absent, thus leaving, for all practical purposes, a common atrium.

The Common Atrioventricular Canal. This defect of the atrial septum extends inferiorly to involve the rim between the mitral and tricuspid valves. It may extend into the interventricular septum and may actually create a combination of a high interventricular and low interatrial defect, with complete patency to flow in this location into all four cardiac chambers.

The Ostium Secundum Defect. The margins of the defect are formed by a complete rim of fibromuscular septal tissue. The defects have been encountered in different locations of the interatrial septum. A rim of tissue which is always present makes possible the closure of the defect by suture, without distortion of the mitral or tricuspid valves and without undue tension at the suture line. Multiple defects or defects formed by a fenestrated

septum have been encountered. Occasionally, the rim of tissue over the posterior portion of the defect is very scant or entirely absent.

In our series, we encountered an unexpectedly high incidence of associated congenital vascular and cardiac anomalies. In the total group of 39 patients operated upon, only 16 were found to have ostium secundum type defects unassociated with other congenital anomalies. Partial anomalous venous drainage in association with a secundum type defect was observed three times, and was completely corrected in two instances. In one patient the interatrial septal defect was closed, but partial anomalous venous drainage of the right upper lobe still persists after surgery. Ten times, we found valvular pulmonic stenosis and a secundum type of defect, with a resultant right ventricular hypertension, and corrected both lesions successfully in all instances. Roughly 25 per cent of all patients in our series who were subjected to closure of interatrial septal defects had the association of anomalies that is commonly known as the trilogy of Fallot. Some of those patients had predominantly right-to-left shunts resulting in severe peripheral arterial desaturation, polycythemia, cyanosis and clubbing of fingers. The right ventricular pressures were markedly elevated—in one instance 190/15 mm. Hg. Once we encountered a patent ductus arteriosus in association with an ostium secundum defect, resulting in rather severe pulmonary artery hypertension (Table 1).

TABLE I

RESULTS OF CLOSURE OF INTERATRIAL SEPTAL DEFECTS OF OSTIUM SECUNDUM TYPE IN A SERIES OF 30 PATIENTS THROUGH THE USE OF HYPOTHERMIA

	Pts.	*Died*
Without other anomalies	16	2*
With partial anomalous venous return	3	0
With patent ductus arteriosus and pulmonary hypertension	1	1*
With pulmonary valvular stenosis (Trilogy of Fallot)	10	0
	30	3

* Death due to severe pulmonary artery hypertension.

We explored seven patients with ostium primum type defects. The following associated lesions were seen on one occasion each: anomalous venous return, coarctation of the aorta, and anomalous drainage of a superior vena cava into an anomalous coronary sinus. We also explored one common atrioventricular canal, but were unable to correct the defect (Table 2).

If encountered now, the defects listed in Table 2 would not be treated under hypothermia. They represent an early group of patients in our experience. Attempts at correction of those more complicated intracardiac lesions would now be made with the use of the extracorporeal circuit and the pump-oxygenator.

TABLE II

OSTIUM PRIMUM TYPE DEFECTS

RESULTS IN A SERIES OF 8 PATIENTS OPERATED UPON USING HYPOTHERMIA

	Pts.	*Died*
Defects closed (one with coarctation of aorta)	4	3
Defects explored and not closed (one patient with anomalous venous return, one patient with anomalous left superior vena cava and left azygos vein draining into giant coronary sinus)	3	0
Common atrioventricular canal (partial closure)	1	1
	8	4

In 16 of the 38 patients operated upon, ventricular fibrillation occurred during cardiotomies under hypothermia. The incidence of ventricular fibrillation increased markedly if the patients' rectal temperatures dropped below 29°C. By experience, we have learned to reduce the incidence of ventricular fibrillation by taking care not to lower the rectal temperature below that level. In the last 11 patients subjected to hypothermia for closure of interatrial septal defects, ventricular fibrillation did not occur. The possibility of ventricular fibrillation has been the main reason why some surgeons have objected to this method. In our experience, if ventricular fibrillation occurred, cardiac resuscitation by electric defibrillation and conversion to ventricular rhythm and eventually to sinus mechanism constituted no serious problem. In three patients with irreparable lesions and extreme pulmonary artery hypertension, ventricular fibrillation resulted in death at the time of the operation. In the remaining 13 patients, defibrillation of the heart was easily accomplished, and subsequent recovery was complete.

We have not noted the disturbances in the blood clotting mechanism which have been reported by some authors who have had extensive experience with the hypothermia technic.[11]

It is our opinion that general hypothermia with temporary complete occlusion of the inflow and outflow tracts of the heart is a simple and effective method of facilitating direct-vision intraatrial surgery. The maximum time for each circulatory occlusion in our series did not exceed eight or nine minutes, and on many occasions shorter periods of occlusion were required. Associated defects such as valvular pulmonic or infundibular stenosis and, in some patients, congenital aortic stenosis can also be corrected satisfactorily and safely through the use of this technic for open-heart surgery.

THE PUMP-OXYGENATOR TECHNIC

Extracorporeal circulation by means of a mechanical pump-oxygenator makes possible the correction of intraventricular and other more complicated defects in the right atrium and right ventricle. The defects can thus be exposed by open cardiotomy in a bloodless field, and can be repaired

without haste under direct vision. Our efforts have been directed toward building and adapting a bubble type oxygenator of the DeWall design.[3, 4] Considerable experimental work had been carried out prior to the first clinical application of this method. We sought to discover the effects that the pump-oxygenator might have, either during or after the cardiac by-pass procedure, upon the constituents of the blood, upon the blood-clotting mechanism and upon the blood pH. We also tested the effectiveness of the bubble-oxygenator by determining arterial and venous oxygen and carbon dioxide levels. Routine determinations were also made of hemolysis and plasma hemoglobin after prolonged total by-pass procedures.

The pump-oxygenator which we are employing at present has proved to be safe and efficient. However, it has a number of drawbacks. Preparing it for operation is a time-consuming and expensive process. It requires a relatively large amount of heparinized fresh blood for priming, and the equipment is rather bulky. Skilled and careful supervision during its use is an absolute necessity.

Blood collected from the superior and inferior venae cavae is pumped through the oxygenator or mixing chamber. From there, it passes by gravity through a chamber coated with a defoaming agent and into the collecting coil and a blood reservoir. It is then pumped from the reservoir, the bottom of which contains blood filters, into the aorta of the patient, usually via the subclavian artery. The coronary venous blood is returned through a separate aspirator from the right auricle to the extracorporeal circuit and the pump-oxygenator (Figure 1). The minute volume delivered by the balanced pumps is precalculated so as to equal 40 cc. per Kg. of the patient's body weight.

The patient as well as the blood in the extracorporeal circuit must be totally heparinized prior to cannulization of the large vessels and the starting of the pumps for extracorporeal flow. After the operative procedure has been concluded, the administration of protamine to the patient will restore the normal blood-clotting mechanism. Some coronary flow persists during the procedure, thus permitting normal cardiac contractions.

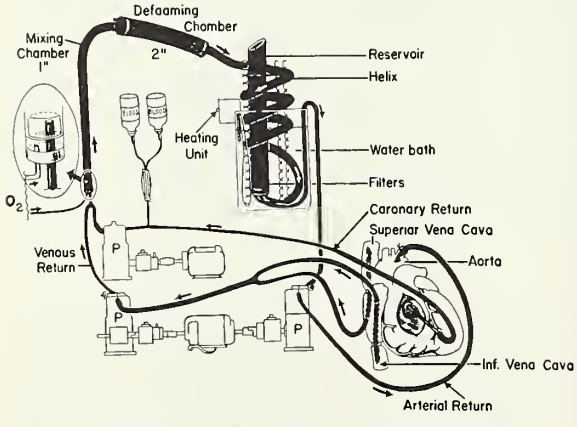


Figure 1. Extracorporeal circuit and cannulization of large vessels of heart.

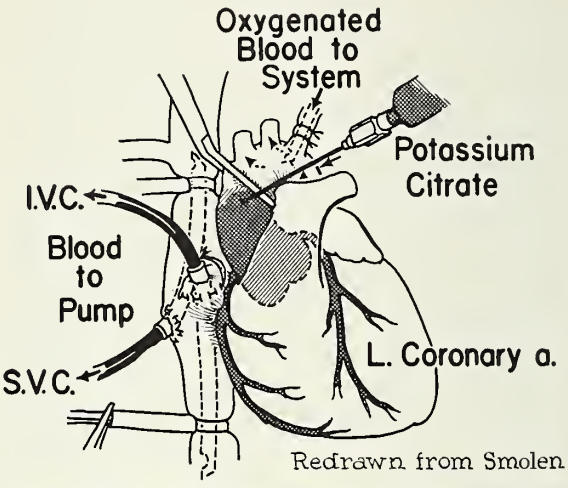


Figure 2. Injection of potassium citrate into coronary arteries via the aorta resulting in cardiac asystole.

In about half of the patients operated upon, we have used an additional modification (Figure 2). Cardiac asystole was produced by intracoronary instillation of potassium.[5, 10, 12] The cardiac asystole has been maintained up to about 30 minutes in some of our patients. The normal cardiac mechanism resumed in every instance after restoration of the coronary arterial flow. The use of complete cardiac asystole during repair of intraventricular anomalies has the advantage of completely relaxing and immobilizing cardiac muscle, stopping the flow of blood into the right side of the heart and eliminating the need for coronary venous return to the pump-oxygenator.

The blood of all patients to be placed on the extracorporeal circuit is most carefully cross-matched with that of the donors who are to supply blood for the pump-oxygenator. In addition, we have carried out the following preoperative determinations on each patient: platelet count, hemoglobin determination, hematocrit determination, one- and two-stage prothrombin tests, fibrinogen clot determination, accelerated globulin test, Lee-White clotting time, prothrombin consumption test, and circulating anticoagulant measurement.

Postoperatively, we have made the following routine determinations: complete blood count, hematocrit determination, plasma hemoglobin determination and Lee-White clotting time. The preoperative blood coagulation studies on the patients with interventricular septal defects have shown a definite decrease of prothrombin consumption, but were otherwise within normal limits.

Interventricular septal defects may be found in different locations, but may be classified as being related to the inflow or outflow tracts of the right

ventricle. They also vary greatly in size and in the type of tissue forming their margins (Figures 3 and 4). At times, approximation of the margins by direct suture will cause those sutures to cut through if they are placed through muscular tissue. Tying the sutures over noncompressed Ivalon sponge plugs has been helpful in preventing this complication in some patients.[8]

Interventricular septal defects may be the sole anomaly, but they are often associated with severe muscular infundibular stenosis of the right ventricular outflow tract. In addition, in association with interventricular septal defects, we have seen patent ductus arteriosus, right descending aortic arch, anomalous valves of the inferior vena cava, valvular pulmonic stenosis, and marked tricuspid and severe aortic valve insufficiency. Some of these associated lesions obviously could not be corrected at the time of closure of the interventricular septal defects.

To date, we have employed an extracorporeal circuit and pump-oxygenator in 14 instances for repair of interventricular septal defects and in one instance for closure of an interatrial septal defect. Though the atrial defect had been thought to be of the ostium primum variety on the basis of the preoperative catheterization data, it was found to be of the secundum type. Two patients died, both having large, high-lying interventricular septal defects with marked infundibular stenosis of the right ventricular outflow tract. One of the deaths was due to the suture line's occluding the aortic outflow tract, and the other occurred 12 hours postoperatively as the result of severe tricuspid regurgitation and acute right ventricular failure.

In one instance, the interventricular septal defect is known to have been closed incompletely, but the child is showing some improvement since surgery. No murmur can be heard postoperatively in nine of the 11 remaining patients. In two others, a systolic murmur of mild degree is still present. Those postoperative murmurs are in patients whose defects were associated with infundibular stenosis. We feel that they are due to an incompletely relieved obstruction of the right ventricular outflow tract, and not to a remaining left-to-right interventricular shunt through incompletely closed defects (Table 3). Postoperative cardiac catheterization should clarify this point.

TABLE III

RESULTS OF CLOSURES OF INTERVENTRICULAR SEPTAL DEFECTS IN 14 PATIENTS

Result	*Without Infundibular Stenosis*	*With Infundibular Stenosis*
Defect closed. No murmur postoperative	9	
Defect incompletely closed. Remaining murmur postoperative.		1
Satisfactory closure. Remaining murmur due to infundibular stenosis.		2
Patients died.		2

SUMMARY

We have presented a series of 53 patients operated upon for either interatrial or interventricular septal defects. In 38 of them, the operative procedures were carried out under general hypothermia, and in the remaining 15, closure was facilitated through the use of an extracorporeal circuit and a pump-oxygenator.

The results of the surgical correction using both methods have been presented. We have attempted to give the reasons for the advisability—and, at times, urgency—of surgical closure of the defects at the atrial and ventricular levels because of the progressive physiologic changes in the right ventricle and pulmonary vascular tree.

The high incidence of other associated cardiac and vascular anomalies with interatrial and interventricular septal defects has been emphasized.

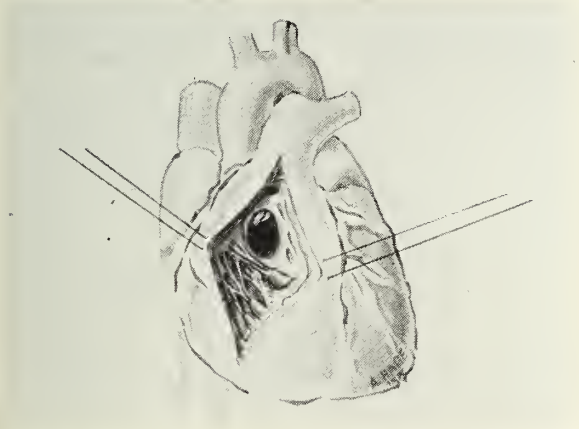


Figure 3. High-lying interventricular septal defect. Some of the aortic valve cusps are visible.

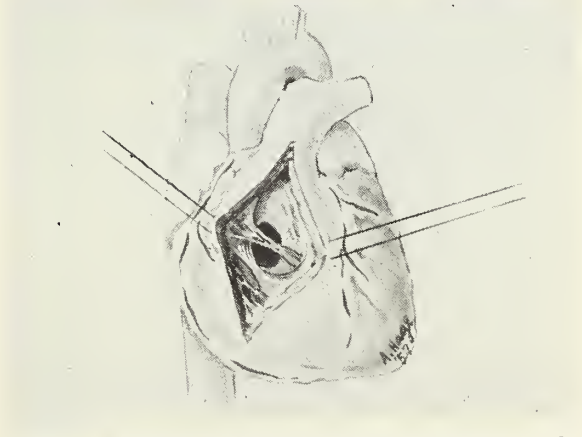


Figure 4. Low-lying interventricular septal defect partly covered by chordae tendineae and papillary muscles of the tricuspid valves.

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State University of Iowa College of Medicine

Clinical Pathologic Conference

December 12, 1956

SUMMARY OF CLINICAL FINDINGS

A 25-YEAR-OLD, slightly obese Negro woman was admitted to SUI Hospitals complaining, "My legs been weak and my right one hurts." The condition had begun one month prior to her admission.

The patient had worked as a cleaning woman in a theatre, and one evening, after sweeping only a small area, she had noted a sudden marked weakness, numbness and tingling in both legs. She had remained in bed for three days thereafter, her legs aching and feeling alternately hot and cold. When she began moving again, one city block was as far as she could walk without stopping to rest. During the next two weeks, there was a decrease in her leg ache, but she noted some stiffness. On admission, she had severe weakness of the left leg, and pain and numbness of the right one.

Six years earlier, the patient had been hospitalized for menorrhagia and had required blood transfusions. Shortly afterward, she had developed "pneumonia" and had again been hospitalized for three weeks. Her left leg had become swollen, but it returned to normal size within two weeks. A normal pregnancy had occurred at age 14, and spontaneous abortions had occurred at ages 15 and 21 years.

The blood pressure was 115/90 mm. Hg., the oral temperature was 100° F., the pulse rate was 124/min., and the respirations were 24/min. The patient was in pain and was perspiring profusely. There was a slight narrowing of the retinal arterioles. No abnormalities were detected in the thorax, abdomen or pelvis. The right thigh was one-third larger than the left, with slight pitting on pressure. The right leg was cold, and there was mottled cyanosis of the foot. A strong pulse was felt in the left groin, but pulses were absent in the right groin, in the popliteal areas and in the feet. The right calf was exquisitely tender, and there was deep tenderness over the inner aspect of the right thigh. The knee reflex was present on the left, but absent on the right, and the tendo-Achilles reflex was absent bilaterally. The right knee and a small area on the dorsum of the left foot were anesthetic.

The hemoglobin was 15 Gm./100 ml. of blood, and the red blood cell count was 5.28 million/cu. mm. There were 19,900 white blood cells/cu. mm., with 90 per cent segmented polymorphonuclear leukocytes, one per cent eosinophils, five per cent lymphocytes and four per cent monocytes. The urine had a specific gravity of 1.024. The pH was 5.5. No sugar was present. The blood urea nitrogen was 10 mg./100 ml., and the creatinine was 1.0. The Wassermann was negative.

Subsequent examinations of the heart revealed no abnormalities. The blood pressure was 140/100 mm. Hg. two weeks following admission. Anticoagulants, penicillin and caudal blocks were used. Finally, amputation was carried out in the left lower thigh, and six days later the right leg was removed at mid-thigh. After two months, the left leg had to be reamputated just below the trochanters, and a week later the same high reamputation was done on the right. Healing was slow. A month later, a skin graft was used to cover the right amputation stump.

When next seen, the patient was 29 years of age, in the last month of a pregnancy, and complaining

of headache, nausea and vomiting. The blood pressure was 156/100 mm. Hg., and subsequent pressures ranged up to 170/140 mm. Hg. The patient was given sedatives. She spontaneously delivered a normal male infant. The blood pressure remained 190/136 mm. Hg. A blood urea nitrogen measurement showed 18 mg./100 ml. The protein-bound iodine level was 8.1 micrograms per 100 ml. The patient was watched, and additional studies were done over the next month. The electrocardiogram was normal. The retinal arterioles were narrow, and there was nicking of the veins at points of crossing. A soft, blowing systolic murmur was noted by one examiner. A phlebitis began in the left arm following injection of dye for an intravenous urogram. This progressed to an axillary-vein thrombosis, with swelling of the arm. The intravenous urograms showed no function of the left kidney. An aortogram was made. Esbach tests of urine showed 1 Gm. of albumin on several examinations. The specific gravity ranged between 1.010 and 1.016.

After a few weeks at home, the patient was admitted to another hospital with a diagnosis of pneumonia, and was given a course of penicillin. She was placed on a low-salt diet, digitalis and diuretics. At home again, she had a sudden spell of dizziness, weakness, nausea and vomiting, and extreme shortness of breath while working in her kitchen. It lasted a half hour and left her weak and tired.

After a week of comparatively good health, it was time for her to return to this Hospital for a scheduled visit. Her blood pressure at that time was 165/118 mm. Hg., her pulse was 64/min., and an x-ray examination showed an increase in heart shadow, the Danzer ratio having changed from 0.58 to 0.63 in three months. The electrocardiogram showed a depressed RS-T segment in leads V_5 and V_6 which was attributed to digitalis. The protein bound iodine was 9.3 micrograms per 100 ml. The I^{131} uptake was 13 per cent in four hours, and 38 per cent in 24 hours. The patient was sent home on a low-salt diet.

At age 31, the patient was readmitted with the complaint of occipital headache, shortness of breath and pain in the anterior chest, made worse by coughing and deep breathing. Her cough produced clear, frothy sputum, and was severe enough to lead to vomiting and the production of some blood. The blood pressure was 120/95 mm. Hg. The left breast was larger than the right, indurated and tender. A nodule was felt in the left axilla. There was a flat percussion note over the left lower chest, and both tactile and vocal fremitus were decreased. A large mass could be seen in this area on the x-ray films. Digitalis was not being given. An electrocardiogram showed sinus rhythm. The P-R interval was 0.14 seconds, and the QRS was 0.06 seconds. There were changes in T waves indicating myocardial disease. Ten days later, a repeat electrocardiogram showed additional changes consisting of a decreased amplitude of the R waves and more widespread T-wave negativity.

The patient was then transferred to the Surgical Service, where a breast biopsy was done. A few days later, the abdomen was explored. Afterward, the patient gradually became disoriented. An attempt to aspirate the left chest resulted in the removal of only 150 ml. of fluid. She had increasing respiratory difficulty, and died.

CLINICAL DISCUSSION

Dr. Edward E. Mason, Surgery: Though none of us who saw this patient before she died could figure out what was causing her difficulties, I think you will conclude we ought to have done so, for all of the information was before us. Dr. January will approach this case with no more data than we had, and whether or not he comes up with the right diagnosis, we shall learn something about how to work on a diagnostic problem of the sort that this case presented.

Dr. Lewis E. January, Internal Medicine: Dr. Mason has made the understatement of the year in saying that I am to discuss this case as an "unknown." I have studied the protocol diligently, but I don't think I know any more about it now than I did at first. Evidently this patient had a very rare disease. There is nothing in the entire protocol that suggests a single diagnosis capable of explaining the onset, in a 25-year-old woman, of a disease producing major arterial thromboses and causing death, nearly six years later, from what appears to have been a neoplasm.

To begin with, the patient apparently had an unrelated pneumonia and thrombophlebitis in the left leg at age 18. In view of the subsequent developments, one wonders whether she had a thrombosing disease and a pulmonary embolism at that time. However, to carry this case back six more years would introduce even greater obstacles, and I will accept the possibility that she did have a bacterial pneumonia and a complicating thrombophlebitis at that time.

At any rate, at age 25 she obviously had a sudden occlusion of the right femoral and left popliteal arteries, and when she came here approximately one month later, she had ischemic lower extremities, an ischemic neuritis and a complicating thrombophlebitis on the right. Radical amputation of both legs and revision of the stumps were required before healing occurred. She had been mildly hypertensive beforehand. The retinal arteries were seen to be slightly narrowed, and the hemoglobin and red count were slightly higher than one usually expects. Beyond these points, I find absolutely nothing helpful. In fact, it is stated that the examination of the heart, lungs, abdomen and pelvis was negative.

Was there an x-ray of the patient's chest at this admission?

Dr. Mason: There was, and it was reported as normal.

Dr. January: I think that the best I can do is to discuss this case as an anatomic problem in thrombosis and attempt to exclude the usual etiologic factors.

Half of all peripheral arterial emboli come from the heart, and most of the remainder are associated with abdominal, and particularly pelvic, malignancies, atherosclerotic plaques in the aorta, trauma and surgery. This patient may have had an embolic accident that plugged these two vessels, but there is nothing to indicate its source. It seems almost unnecessary to consider severe atherosclerosis in a 25-year-old woman who is non-diabetic, normal in weight and not markedly hypertensive, and who has no other stigmata of atherosclerosis or of the xanthomatoses. On the other hand, major arterial occlusions from thrombosis also occur abruptly, but here again at least one-third of them are associated with atherosclerosis. There is nothing in this protocol to make us give serious consideration to any of the usual remaining causes: Buerger's disease, the several collagen vascular syndromes, polycythemia vera, trauma and debilitating disease. Cryoglobulinemia is said to be associated with major arterial thromboses. Were the cryoglobulins determined in this patient?

Dr. Mason: No.

Dr. January: There is another rare thrombosing disease called essential thrombophilia, which is characterized by thrombocytosis, increased serum globulin and fibrinogen, and an increased heparin tolerance. Were any tests done for the detection of such abnormalities?

Dr. Mason: No.

Dr. January: Obviously, aortic dissection has at least to be mentioned, but the patient lacked the dramatic onset which ordinarily characterizes it, and I am assuming that she did not have the severe atherosclerosis which usually predisposes to the tear in the intima, whether medio-necrosis exists or not. Also, it would be rare for dissection to begin below the common iliacs, and the average age for dissection of the aorta is 60 years. On the other hand, the patient was mildly hypertensive upon admission, and we do not know how high her blood pressure may have been beforehand. A few patients do survive aortic dissection, but I think there is insufficient evidence for such a diagnosis here.

Now, when the patient was admitted four years later, she was pregnant and hypertensive, and she had symptoms of mild toxemia. The phlebitis in the arm after injection of dye for pyelograms lacks specificity and occurs rarely in people who have no thrombosing or embolic problems. The intravenous pyelogram revealed non-function of the left kidney. In my present state of bewilderment, the temptation to grasp for the Leriche syndrome almost overwhelms me.

I see that an aortogram was done, but the result was omitted from the protocol. What did it show?

Dr. Carl L. Gillies, Radiology: The distal aorta was obviously occluded, along with the left renal artery. The arteries of the celiac axis and the right renal artery were visualized.

Dr. January: Did it differ from a Leriche-type occlusion as you saw it on an x-ray film?

Dr. Gillies: It was the same picture.

Dr. January: I think one can logically assume that the worsening of the patient's blood pressure, which by that time had risen to 190/136, was associated with an ischemic left kidney, and this finding is consistent with the Leriche syndrome. But though Dr. Gillies has given me a better basis for a diagnosis than I could find in the protocol, I seriously doubt that this patient had the Leriche syndrome. It is almost unheard of in a 25-year-old woman; it is insidious rather than abrupt in onset; and extensive gangrene in the extremities isn't usually a feature. Thrombosis of the aorta from any other cause would result in the same aortogram.

Next, in the protocol, comes the suggestion that her "pneumonia" after a few weeks at home, may in fact have been cardiac failure, and that her pulmonary embolism a few days later explained her attack of severe dyspnea while at work. At least there now is a possible site for an embolus from a failing heart, and a few days later a chest x-ray here showed that the heart size had increased.

Two years later she returned for the last time with pulmonary symptoms, signs of increased density in the left lung, a lesion in the left breast and left axillary lymphadenopathy. A large mass was seen in the left lung on the chest x-ray. Carcinoma of the breast, with axillary-node and pulmonary metastases, clearly explains this series of events. There was a breast biopsy, followed by an abdominal exploration. At this point, I think I'm entitled to know the result of the biopsy and the reason for the abdominal surgery.

Dr. Mason: The biopsy revealed carcinoma of the breast. We were so confused by that time that we didn't know where to start. We didn't know whether to work solely on the diagnosis of carcinoma of the breast, or whether to suppose that the patient had a separate tumor in her chest. If she had only a carcinoma of the breast, we thought that taking her ovaries out and giving her testosterone might help her. Then too, we thought that at the same time we could feel her liver and determine the extent of her neoplasm.

Dr. January: The electrocardiograms are of great interest. The first one is described as normal, and the second is said to show effects of digitalis. However the final two showed marked changes, described as progressive T-wave negativity and progressive diminution in the amplitude of R waves. Neither hypertension, cardiac failure nor pulmonary emboli explain such changes. Futhermore,

these are not the usual changes of myocardial infarction, and there is no clinical support for supposing that they indicate any such thing. I assume that the large mass in the left lung that is referred to in the protocol is metastatic breast cancer. The mass adjacent to the heart might itself explain some, but not all, of the electrocardiographic changes. Therefore, I predict that the metastatic neoplasm had invaded the pericardium and the subepicardial myocardium. Dr. Gillies, what did the last chest x-ray show?

Dr. Gillies: There was a large mass displacing the heart to the left. On x-ray its shadow could not be separated from that of the heart.

At this point, I think Dr. January is entitled to know that although the chest films were reported as normal, I doubt, in retrospect, that they were. In earlier films, there was a small abnormal bulge along the left border of the heart. This mass apparently was connected with the heart.

Dr. January: Now I *am* demoralized. I've thought about this case for so long that I'm not sure I can change my pattern. This startling new information opens the possibility that the mass in the chest was cardiac in origin, and not metastatic lung cancer. Myxoma of the left atrium is the only primary neoplasm of the heart with which I've had any experience, and here the confusion is with mitral stenosis or a ball-valve thrombosis, rather than with a long history of arterial thrombosis or embolization. I am not aware that other primary neoplasms of the heart or pericardium announce themselves early by means of massive peripheral embolism, although obviously they might become the site of intracardiac thrombosis with subsequent embolization. It seems to me that the six-year history in this patient contraindicates a primary cardiac neoplasm.

Therefore, I shall have to be content with the theory that the patient had an unclassifiable thrombosing arterial disease, with sudden occlusion in the arteries to the extremities; gradual extension upwards in the aorta to block the left renal artery, and renal ischemia aggravating the hypertension. She later developed cardiac failure and pulmonary emboli. Terminally, she had breast cancer, with pulmonary and cardiac metastases. I suppose it would be foolish of me to ignore the possibility of a primary cardiac or pericardial neoplasm that Dr. Gillies just offered.

Dr. Mason: Do you want to explain the thrombosis?

Dr. January: Yes, but I can't. I presume the amputated extremities were examined by the pathologist. Information from him might help, but up to now it hasn't been available.

Dr. Mason: It's my opinion that you've done very well indeed.

Dr. George R. Zimmerman, Pathology: As suggested in the protocol, this patient had complete occlusion of the lower abdominal aorta. The common iliacs were reduced to slender, fibrotic cords without any lumens. The clot extended up into the left renal artery and occluded it too. The left kidney weighed 35 Gm., in contrast with the normal weight of about 150 Gm. It was rubbery and fibrous; the capsule was densely adherent; and the cortico-medullary junction was completely obscured. Despite several large scars, which were typically stellate when viewed from the surface, and pyramidal on cross section, the right kidney weighed 175 Gm. The spleen was congested and of approximately twice normal weight. In the spleen also, there were three old scars. There were similar old scars in both lungs, and in addition there were several firm, wet, dark red, sharply defined areas that again were pyramidal or conical in shape, with the base of the cone or pyramid against the pleura. Several pulmonary artery branches were occluded by old clots and several by fresher clots. Some were adherent to the vessel wall, and some were unattached. In the right occipital lobe of the brain, well forward and beneath the cortex, was a 3 x 4 x 1 cm. area of softening. Several of the uterine veins were occluded by blood clots. The ovaries were missing.

In the left breast, there was an 8 cm. tumor, hard and non-encapsulated. Its cut surface was gray and



Figure 1. Adenocarcinoma of left breast. H & E stain.

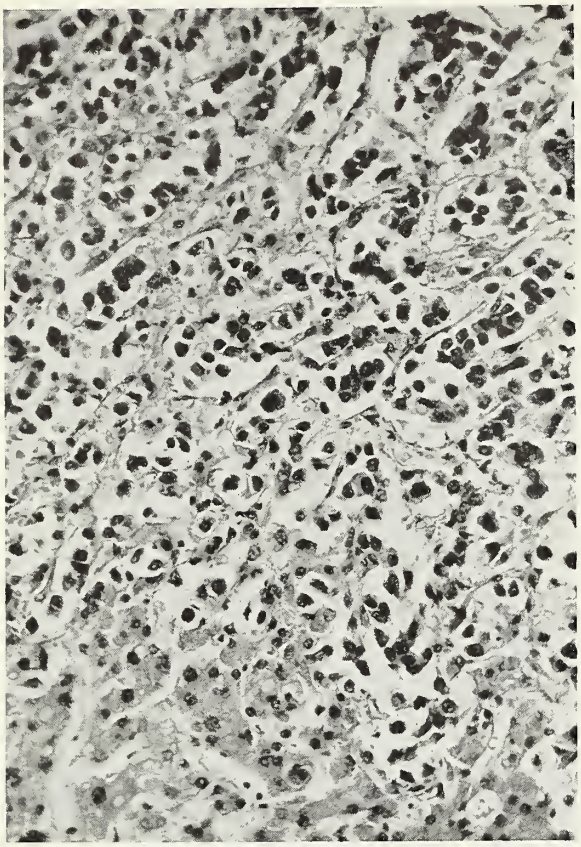


Figure 2. Metastatic adenocarcinoma of breast in liver. H & E stain.



Figure 3. Cut surface of cardiac lipomyxosarcoma: transverse section just above apex of heart. Ovoid mass in lower right corner is the transected left ventricle. The lower half of the tumor is predominantly liposarcomatous; the upper half is predominantly myxosarcomatous.

edematous except for small, opaque, yellow, pasty areas. There were similar metastatic tumors in the axillary lymph nodes on the same side, in the retrosternal lymph nodes and in the liver.

The heart was partly replaced by tumor. The pericardial cavity was obliterated. The heart, with the pericardial sac and tumor, weighed 1,950 Gm.—about six or eight times the normal amount. The dimensions of the tumor were 10 x 10 x 16 cm. It seemed primarily apical in location, but had invaded upwards and had replaced portions of both ventricular walls and portions of the interventricular septum. It involved epicardium, myocardium and endocardium. In addition to the main tumor, there were small, subendocardial nodules over the ventricles, over the right auricle, over the root of the pulmonary artery and over the ascending aorta. All of the smaller nodules were anatomically distinct and either were of separate origin or were metastases. Parts of the heart tumor were cream colored, rather opaque and quite firm. Other parts were distinctly different, in that they were gelatinous or mucinous, soft and semi-translucent. Still other parts of the tumor were frankly necrotic.

Histologically, in the left kidney there were a few relatively normal glomeruli, but most of them were densely fibrotic. In between the scarred glomeruli were a very few extremely atrophic tubules, a little bit of fibrous stroma, and a few lymphocytes and plasma cells. The right kidney contained several healed infarcts, and there was some compensatory hypertrophy of that kidney. Its tubules were dilated, actually enlarged, and the glomeruli were relatively more widely spaced.

One of the splenic infarcts still had some old blood pigment admixed with the dense, hypocellular scar tissue. From the blood pigment, I judged them to be anywhere from six or nine months to a year old. Most of the other infarcts in the spleen, and those in the right kidney and lungs, were of that age or older. Sections from the edge of one of the dark, hemorrhagic areas in the lungs showed necrosis of the alveolar walls, as indicated by lack of normal staining. The extravasated blood was quite fresh, the erythrocytes were as yet quite well preserved, and there was practically no neutrophilic response. Therefore, the infarct must have been quite recent, but old enough to allow the tissue in its center to undergo the staining changes. The age of that infarct could be measured in hours.

A section of one of the blood clots in the pulmonary arterial system showed a laminated throm-



Figure 4. Photomicrograph of the most highly differentiated liposarcomatous component of the cardiac neoplasm. H & E stain. The cytoplasmic globules stain with Sudan fat stain.

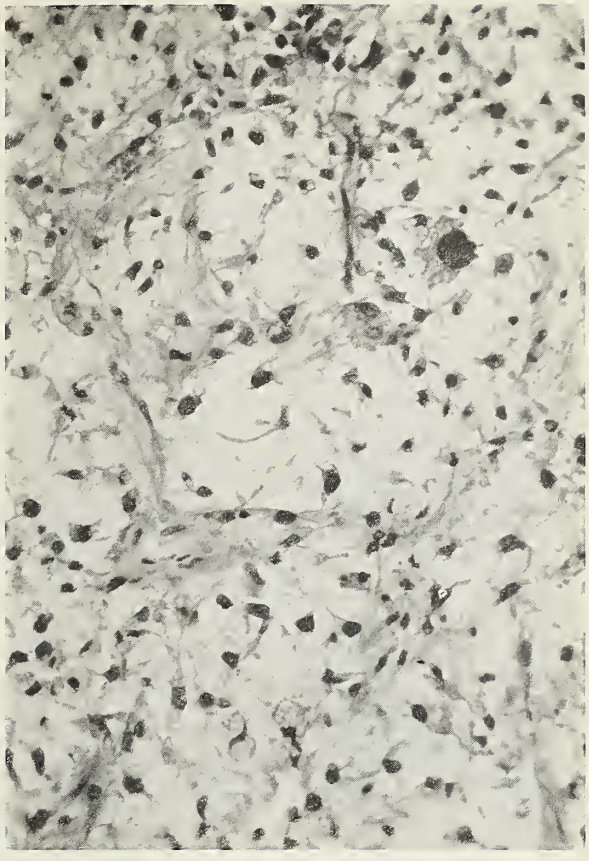


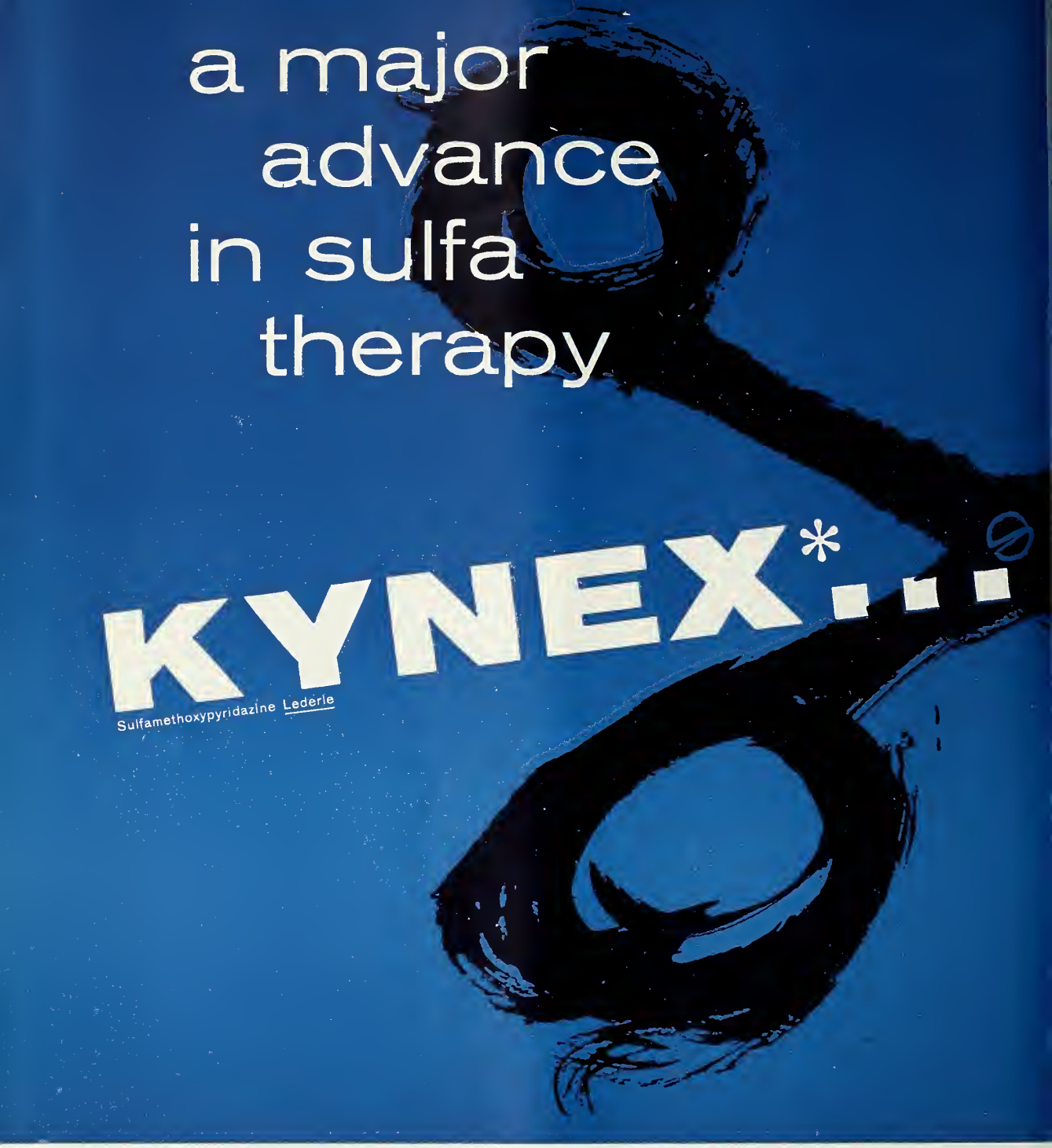
Figure 5. Photomicrograph of the myxosarcomatous component of the cardiac neoplasm.

bus. The endothelium of the artery showed no reaction, so the thrombus had not been there long. The laminae of the thrombus formed a complex pattern and were variously oriented in respect to the vessel wall, as if the thrombus had formed elsewhere and had tumbled into the position where we found it. It was an embolus, and probably had done just that. A clot in one of the vascular channels of the uterine wall, on the other hand, appeared to have formed there. This clot also was laminated—i.e., made up of alternating layers of fibrin, erythrocytes and leukocytes—but the laminae were parallel to the sheet of lining endothelium, the endothelial cells were swollen, and fibroblasts had made an early invasion of the thrombus. Where the pulmonary emboli may have originated is uncertain, but probably they came from the right ventricle, over the heart tumor, or perhaps from the uterine or pelvic veins.

Microscopically, the area of softening in the brain was necrotic and was rimmed by infiltrates of vacuolated mononuclear phagocytes. Around it was viable but very edematous brain tissue. There was no proliferation of glial tissue, which would have begun the repair of the infarct at about the end of the third week after infarction. Thus, we can deduce that this infarct was less than three weeks old. In view of the considerable number of mononuclear phagocytes, and in view of the fact that there no longer were any neutrophils, this infarct was probably from two to three weeks old.

The tumor in the left breast was a recognizable but not very well differentiated adenocarcinoma of breast origin. In places there were larger cell masses which were necrotic centrally. In the gross, these were manifest as pasty, opaque material which could be pressed out onto the surface. The metastatic carcinoma in axillary and retrosternal nodes and in the liver tended to be a little more anaplastic, but was still readily indentifiable with the carcinoma arising in the breast.

Before discussing the heart tumor, it seems worthwhile for me to point out that the appearance of carcinomas of the breast or other areas is not altered significantly, either grossly or histologically, when they metastasize to the heart. In a few instances, there appear suggestions in the literature that the mechanical stresses imposed by the myocardium may alter the histologic appearance of a neoplasm. If that is true, the degree and type of alteration is such that it can safely be ignored in this particular case.



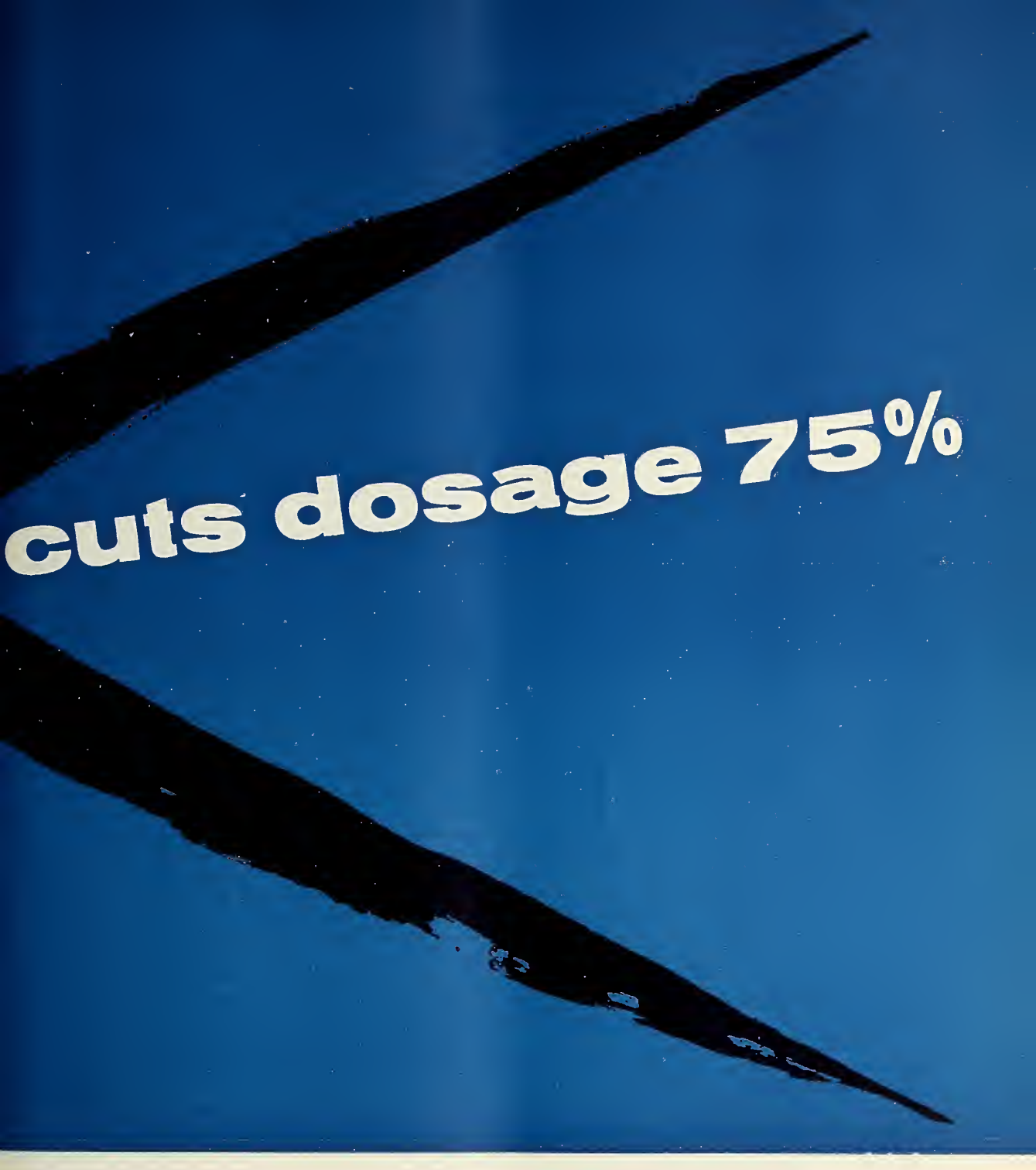
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The microscopic sections from the heart neoplasm showed a varied pattern and a variety of cell types, none of which were at all suggestive of breast origin. At one extreme were the sections from the yellowish, opaque and firm parts of the tumor. The component cells were very large, with small, eccentric or peripheral nuclei which were often compressed and flattened by a large, solitary, cytoplasmic vacuole or by multiple small cytoplasmic vacuoles. Even with hematoxylin and eosin stains, these were readily recognizable as fairly mature fat cells. Sudan stains identified the cytoplasmic vacuoles as free fat. At the other extreme were the cells from the gelatinous and mucinous portions of the tumor. Most of the neoplastic cells in those areas were small and stellate, with a moderate amount of pale cytoplasm and long, anastomosing cytoplasmic processes. Between them was an abundance of mucinous material which stained with Alcian blue and which at least suggested that the stromal substance was a connective-tissue type of mucin. Periodic acid-Schiff stain for epithelial mucins failed to stain either the cytoplasmic vacuoles of the tumor cells or the stromal substance.

Between the two extremes were cells which suggested a transition from the myxomatous to the lipomatous cell types. For example, many of the larger myxomatoid cells had vacuoles of fat in their cytoplasm. There were also many large cells with large nuclei of very bizarre shape and staining characteristics, and there were numbers of mitotic figures, many of which were distinctly abnormal. These features and their anatomic distribution indicated the malignancy of the neoplasm. It was myxoliposarcoma.

Now to reconstruct the patient's medical story. Her history started at age 15 with a spontaneous abortion. At age 18, she had menorrhagia so severe as to require transfusions. In the light of her other medical history, and since she apparently had only a single episode of hemorrhage, we can assume that it was a second abortion. Several weeks later, she was said to have had pneumonia, but about that illness we can say no more, for we have no other information. At age 21, she had another abortion.

I think that at the age of 25 she had the first manifestations of her cardiac tumor. From what we know about tumors of this type, a six-year history is not at all inconceivable. She had intramural thrombi over the tumor in the left ventricular wall of the heart, and an embolus occluded her abdominal aorta. Soon afterward, the left renal artery was occluded, either by embolism or by retrograde thrombosis.

A month later, when she was admitted to University Hospitals, her blood pressure was 115/90 mm. Hg., but two weeks later it was 140/100. She also had narrowing of the retinal arterioles when first examined. When the initial blood pressure determination of 115/90 mm. Hg. was obtained, this

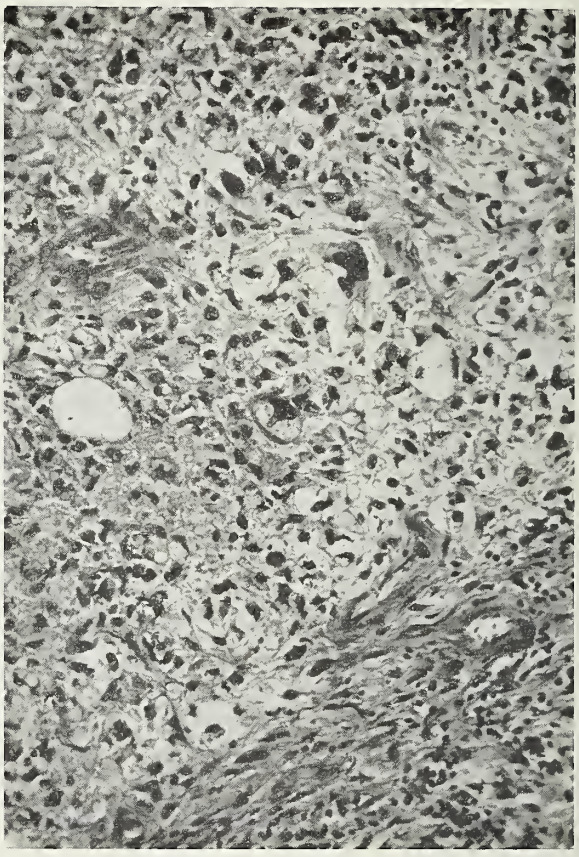


Figure 6. Photomicrograph of one of the more anaplastic areas of the cardiac neoplasm. H & E stain. There are two bizarre cell forms at and above the center.

woman had impending gangrene. She was in pain. She was perspiring profusely. Her hemoglobin level was slightly elevated or in the high range of normal, and her erythrocyte count was high. Her urine was concentrated. All of this suggests that she was probably in early shock, and that had it not been for mild shock, her blood pressure determination would have reflected the vascular pressure elevation commonly produced by the "Goldblatt kidney."

She then had an amputation and a reamputation, and returned, at the age of 29, with symptoms of toxemia of pregnancy. But after pregnancy, her blood pressure remained elevated, and she had arterial venous nicking. A soft, blowing systolic murmur was heard at that time. On that admission, after an intravenous pyelogram she also had phlebitis of the left arm. I consider that unrelated to her other pathologic findings. Several weeks later, she was said to have had pneumonia, but instead, she may have had a pulmonary infarction. Either before this time or within the next year, she had numerous infarcts of the spleen, of the lungs and of the right kidney. The attack of dizziness, nausea and vomiting, and shortness of breath may have been a manifestation of one of

these infarcts. Shortly afterward, she had a demonstrable increase in the size of her heart shadow, with EKG changes, pain and progressive dyspnea. Breast carcinoma, as we know now, was found, and she had a bilateral oophorectomy. Three weeks before she died, she suddenly developed aphasia and urinary incontinence—symptoms that correlate very nicely with the estimated age of the infarct of the brain. On her last day—and probably this caused her death—she had another pulmonary embolism, or pulmonary emboli, with pulmonary infarction. No tumor was indentified in any of the emboli, including the old one of the aorta.

Dr. Mason: I admire Dr. January for accepting this case, and I admire him even more for coming up with the right diagnosis. About the only thing he missed was the "lipomyxo" part of it, and even the pathologist had to use special stains to decide about that.

When we saw the mass in the left breast and saw that it overlay the mass on the chest x-ray, we were naturally tempted to think that perhaps the mass had grown right through the chest, either from the breast down or from within the chest out. I think it is obvious that nothing could have been done. Dr. Ehrenhaft, do you ever take out tumors of the heart? What would a removable tumor of the heart look like?

Dr. Johann L. Ehrenhaft, Surgery: I have little to add to this discussion, but I should like to show you a slide of a tumor in the left auricle. Usually tumors of the ventricle are malignant, but auricular tumors, usually being myxomas, are benign. On admission, the patient who had the auricular tumor that I'm showing you, carried a questionable diagnosis of mitral stenosis. All her symptoms were rather classic for that type of disease, even though she had no history of rheumatic infection. A lesion which proved to be a myxoma was removed from the left auricle, but the patient died on the operating table as a result of blood loss and a ventricular fibrillation which could not be converted. A few auricular tumors have been successfully removed, but they have been extremely rare, and I do not know of any ventricular malignant neoplasms that have been resected successfully.

Dr. Raymond G. Bunge, Urology: Did this heart tumor cause the thrombosis?

Dr. Mason: Dr. Zimmerman says that the heart tumor caused the thrombosis, and I think his conclusion is reasonable. We don't very often see thrombosis of the lower end of the aorta in a 25-year-old woman, and when we do see it, we ought to have some explanation for it. Dr. Zimmerman's is a beautiful explanation. The patient had a tumor in the heart that involved the endocardium, and either part of the tumor broke off, or a thrombus formed over the endocardial surface of the sarcoma. This thrombus broke off and embolized to the lower end of the aorta. Now we should like to know whether any tumor was found at the lower end of the aorta when the postmortem was done. Dr. Zimmerman says, "No." Thus, either (1) this was a clot that formed over the tumor, or (2) it was a tumor that embolized, was not viable and did not grow in that area.

Dr. January: Dr. Mason gave me credit for making the diagnosis, but really I didn't. Just to keep the record straight, let me reiterate that the possibility of a primary cardiac tumor never entered my mind until Dr. Gillies gave me the revised x-ray opinion. Even now, I have the feeling that the mode of onset and the duration of the illness mark this case as a rare example of a rare disease.

Dr. Mason: Your analysis of the electrocardiogram in this case correctly indicated neoplastic involvement of the heart. Do those changes have specificity for this condition?

Dr. January: Definitely not! An electrocardiographic interpretation, to be meaningful, must be arrived at in the light of the clinical facts. Failure to take clinical data into consideration leads to uncounted errors and wholesale human misery.

ANATOMIC DIAGNOSES

1. Lipomyxosarcoma of heart
2. Embolic occlusion of lower abdominal aorta, old
3. Amputation of both lower extremities, old
4. Occlusion (thrombotic or embolic) of left renal artery, with "atrophy" of left kidney, old
5. Hypertension (clinical)
6. Infarction of lung, recent and old
7. Infarcts of spleen, healed
8. Infarcts of right kidney, healed
9. Infarction of right occipital lobe of brain, recent
10. Adenocarcinoma of left breast, with metastases to left axillary lymph nodes, to retrosternal lymph nodes and to liver
11. Oophorectomy, bilateral

AMES COMPANY OFFERS FILM

The film "Urine Sugar Analysis for Diabetics," developed in cooperation with the medical profession, is available at no charge to doctors through Ames Company, Inc., Elkhart, Indiana.

The film was made as a visual aid to be used in the education of diabetic patients, and shows the relationship between carbohydrates and insulin. It also explains in lay language the meaning of various diabetic conditions. It has been produced on 16 mm. film in color and sound track, and has a running time of approximately 10 minutes. Appropriate hand-out literature accompanies the film.

Showings at diabetic clinics, diabetic lay societies and other diabetic groups must be requested from the company or from its representatives.

Coming Meetings

In State

Apr. 4	**Iowa-Nebraska Medical Assembly.** Hotel Chieftain, Council Bluffs
Apr. 10-11	**Joint Annual Meeting, Iowa T-B & Health Association, Iowa Trudeau Society and Iowa Public Health Association.** Hotel Savery, Des Moines
Apr. 17	**Neurology. SUI,** Iowa City
Apr. 27-28	**Annual Meeting, Blank Memorial Hospital Association.** Raymond Blank Memorial Hospital, Des Moines
Apr. 28-May 1	**Annual Meeting, Iowa State Medical Society.** Veterans Memorial Auditorium, Des Moines

Out of State

Apr. 1-2	**Regional Meeting, International College of Surgeons.** Santa Barbara
Apr. 1-2	**Pediatrics Seminar.** Univ. of Nebraska College of Medicine, Omaha
Apr. 1-3	**Surgery in Acute Trauma.** Valley Forge Army Hospital, Phoenixville, Penna.; Tripler Army Hospital, Honolulu; Fitzsimons Army Hospital, Denver; Madigan Army Hospital, Tacoma; Letterman Army Hospital, San Francisco; Army Hospital, Ft. Bliss, Texas; Walter Reed Army Medical Center, Washington, D. C.
Apr. 1-3	**Clinical Reviews, Mayo Clinic and Mayo Foundation.** Rochester, Minn.
Apr. 1-3	**American Academy of Pediatrics.** Washington, D. C.
Apr. 1-5	**Surgery of the Colon and Rectum.** Cook County Graduate School of Medicine, Chicago
Apr. 1-5	**Ophthalmic Plastic Surgery.** New York University, NYC
Apr. 1-5	**Radioactive Iodine, Course I.** Cook County Graduate School of Medicine, Chicago
Apr. 1-5	**Evaluation of Industrial Environment.** Institute of Industrial Health, Cincinnati
Apr. 1-5	**Neurology.** Mt. Sinai Hospital, NYC
Apr. 1-5	**Metabolism & Endocrinology.** University of Michigan, Ann Arbor
Apr. 1-5	**Management of Mass Casualties.** Ft. Sam Houston, Texas
Apr. 1-5	**Gastroenterology (American College of Physicians).** Boston Univ.
Apr. 1-5	**Basic & Clinical Allergy.** Montefiore Hospital, Pittsburgh
Apr. 1-5	**Postgraduate Course (American College of Physicians).** Bellevue Stratford Hotel, Philadelphia
Apr. 1-6	**30th Annual Spring Congress. Gill Memorial Eye, Ear, Nose & Throat Clinic.** Roanoke
Apr. 1-6	**Physical & Occupational Therapy in Polio.** Warm Springs Foundation
Apr. 1-12	**Pediatric Cardiology.** New York University, NYC
Apr. 1-12	**Urologic Pathology.** New York Polyclinic Med. Sch. & Hosp., NYC
Apr. 1-12	**Gynecologic & Obstetric Pathology.** New York Polyclinic Med. Sch. & Hosp., NYC
Apr. 1-12	**Environmental Radiation Sanitation.** Taft Sanitary Engineering Ctr., Cincinnati
Apr. 1-12	**Radioactive Iodine.** Cook County Graduate School of Medicine, Chicago
Apr. 1-12	**Urology.** Cook County Graduate School of Medicine, Chicago
Apr. 1-12	**Cystoscopy.** Cook County Graduate School of Medicine, Chicago
Apr. 1-19	**Diagnosis & Treatment of Pain by Regional Block.** U. of Penna., Phila.
Apr. 1-26	**Refraction.** New York Polyclinic Med. Sch. & Hosp., NYC
Apr. 1-26	**Clinical Surgery.** New York Polyclinic Med. Sch. & Hosp., NYC
Apr. 1-26	**Clinical & Operative (Cadaver) Surgery.** New York Polyclinic Med. Sch. & Hosp., NYC
Apr. 1-26	**Clinical and Office Obstetrics.** New York Polyclinic Med. Sch. & Hosp., NYC
Apr. 1-26 or Apr. 1-May 10	**Clinical Proctology.** New York Polyclinic Med. Sch. & Hosp., NYC
Apr. 1-27	**Clinical Gastroenterology.** New York Polyclinic Med. Sch. & Hosp., NYC
Apr. 1-30	**Residence Training in Pulmonary Diseases.** Univ. of Kansas Med. Ctr., Kansas City, Kans.
Apr. 1-30	**Clinical Obstetrics (Harvard University).** Boston Lying-In Hospital
Apr. 1-May 3	**Course for GP's.** New York Polyclinic Med. Sch. & Hosp., NYC
Apr. 1-May 10	**Proctology and Gastroenterolgy, With Operative Proctology (Cadaver).** New York Polyclinic Med. Sch. & Hosp., NYC
Apr. 1-May 11	**Clinical Gynecology.** New York Polyclinic Med. Sch. & Hosp., NYC
Apr. 3-5	**Second Inter-American Medical Convention.** Hotel El Panama, Panama City, C. Z.
Apr. 3-5	**Fifth Annual Spring Postgraduate Assembly.** U. of Nebraska College of Medicine, Omaha
Apr. 4-5	**Medicine.** Tulane University College of Medicine, New Orleans
Apr. 4-6	**Hematology.** Tufts University College of Medicine, Boston
Apr. 5	**Psychiatry & Neurology.** Medical College of South Carolina, Charleston
Apr. 6	**Trauma for GP's.** U. of Minnesota Center for Continuation Study, Minneapolis
Apr. 7-10	**Pan American Association of Ophthalmology.** Hotel Statler, NYC
Apr. 8-9	**Regional Meeting, International College of Surgeons.** Las Vegas
Apr. 8-9	**Auscultation of the Heart.** U. of Kansas Med. Ctr., Kansas City, Kans.
Apr. 8-10	**Radiology for GP's.** U. of Minnesota Ctr. for Continuation Study, Minneapolis
Apr. 8-10	**Gallbladder Surgery.** Cook County Graduate School of Medicine, Chicago
Apr. 8-10	**Sectional Meeting, American College of Surgeons.** St. Paul
Apr. 8-12	**Annual Session, American College of Physicians.** Boston
Apr. 8-12	**International Academy of Proctology.** Washington, D. C.
Apr. 8-12	**Ophthalmology & Otolaryngology.** U. of Kansas Med. Ctr., Kansas City, Kans.
Apr. 8-12	**Diagnostic Radiology.** U. of Michigan, Ann Arbor
Apr. 8-12	**Gastroenterology.** Mt. Sinai Hospital, NYC
Apr. 8-12	**Gynecology & Endocrinology.** New York University, NYC
Apr. 8-19	**Transmeatal Surgery.** Mt. Sinai Hospital, NYC
Apr. 8-19	**Basic General Surgery.** Cook County Graduate School of Medicine, Chicago
Apr. 8-19	**Treponema Pallidum Tests for Syphilis. V-D** Research Laboratories, Chamblee, Georgia
Apr. 8-20	**Surgical Technic, Course I.** Cook County Graduate School of Medicine, Chicago
Apr. 8-20	**Review Course in General Surgery.** Cook County Graduate School of Medicine, Chicago
Apr. 8-20	**Gynecology, Course II.** Cook County Graduate School of Medicine, Chicago
Apr. 8-May 31	**Internal Medicine,** New York University, NYC
Apr. 9	**Annual Meeting, California Society of Anesthesiologists.** Sun Valley
Apr. 10-12	**Orthopedics in General Practice.** New York University, NYC
Apr. 10-13	**Fractures (American College of Surgeons).** John B. Murphy Auditorium, Chicago
Apr. 11-13	**Cardiology.** Tufts University College of Medicine, Boston
Apr. 11-13	**Allergy & Chest Diseases.** U. of Minnesota Ctr. for Continuation Study, Minneapolis
Apr. 11-13	**Surgery of Hernia.** Cook County Graduate School of Medicine, Chicago
Apr. 15-17	**Industrial Medicine.** U. of Minnesota Ctr. for Continuation Study, Minneapolis
Apr. 15-17	**School Health Preservice Training (NYC Department of Health).** Kips Bay, New York
Apr. 15-17	**Social Psychiatry.** Walter Reed Army Medical Ctr., Washington, D. C.
Apr. 15-17	**Anesthesiology.** U. of Kansas Medical Ctr., Kansas City, Kans.
Apr. 15-19	**Gastroenterology.** U. of Michigan, Ann Arbor
Apr. 15-19	**Clinical Bronchoscopy.** Cook County Graduate School of Medicine, Chicago
Apr. 15-20	**Regional Anatomy & Cadaver Surgery in Otolaryngology.** U. of Cincinnati
Apr. 15-26	**Gastroenterology.** Cook County Graduate School of Medicine, Chicago

Apr. 15-26	**Cystoscopy.** Cook County Graduate School of Medicine, Chicago
Apr. 15-27	**Regional Anesthesiology.** New York University, NYC
Apr. 15-27	**Cardiology.** St. Michael's Hospital, Newark
Apr. 17	**Series of Clinics & Lectures by Dr. Paul Dudley White.** Univ. of Texas Medical Center, Houston
Apr. 18	**Recent Advances in Medicine.** Rochester General Hosp., Rochester, N. Y.
Apr. 18-20	**Otolaryngology.** U. of Michigan, Ann Arbor
Apr. 18-20	**Diagnosis & Mgmt. of Early Cancer.** Memorial Center for Cancer & Allied Diseases, NYC
Apr. 18-20	**Venereal Diseases.** U. of Tennessee, Memphis
Apr. 20-26	**Twelfth National Industrial Health Conference.** Kiel Auditorium, St. Louis
Apr. 22-24	**Ophthalmology.** U. of Michigan, Ann Arbor
Apr. 22-24	**Rheumatology.** U. of Michigan, Ann Arbor
Apr. 22-24	**Diagnosis and Mgmt. of Tuberculosis.** City of Hope, Duarte, Calif.
Apr. 22-26	**Gynecology for GP's.** State University of New York, Syracuse
Apr. 22-26	**Tuberculosis and Other Pulmonary Diseases in Children.** New York University, NYC
Apr. 22-26	**Oral Surgery.** Letterman Army Hospital, San Francisco
Apr. 22-27	**Anesthesia.** U. of Buffalo School of Medicine, Buffalo
Apr. 23-27	**EKG Course C.** Beth Israel Hospital, Boston
Apr. 23-May 7	**General Surgery.** Cook County Graduate School of Medicine, Chicago
Apr. 24-25	**Eighth Annual Symposium on Venereal Diseases.** Health, Education & Welfare Department, Washington, D. C.
Apr. 24-26	**Midwest Hospital Association.** Kansas City
Apr. 24-26	**Pediatric Oncology.** Memorial Center for Cancer & Allied Diseases, NYC
Apr. 25	**Obstetrics.** University of Nebraska, Lincoln
Apr. 25-27	**Pulmonary Diseases.** Kansas U. Med. Ctr., Kansas City, Kansas
Apr. 25-31	**World Congress of Gastroenterolgy.** Sheraton Park Hotel, Washington, D. C.
Apr. 28-May 1	**Annual Meeting, California Medical Association.** Ambassador Hotel, Los Angeles
Apr. 29-30	**Varicose Veins.** Cook County Graduate School of Medicine, Chicago
Apr. 29-May 1	**Tri-State Hospital Association.** Chicago
Apr. 29-May 3	**Recent Advances in Therapeutics.** U. of Michigan, Ann Arbor
Apr. 29-May 3	**Vaginal Approach to Pelvic Surgery.** Cook County Graduate School of Medicine, Chicago
Apr. 29-May 4	**Neurology for GP's.** New York University, NYC
Apr. 29-May 10	**Surgical Technic.** Cook County Graduate School of Medicine, Chicago
Apr. 29-May 10	**Diagnostic X-ray.** Cook County Graduate School of Medicine, Chicago
Apr. 29-May 10	**General Review Course.** Cook County Graduate School of Medicine, Chicago
Apr. 29-May 10	**Cystoscopy.** Cook County Graduate School of Medicine, Chicago
May 1	**Second Annual Trauma Day.** Univ. of Nebraska Coll. of Med., Omaha
May 1-11	**Pain Syndromes: Diagnosis & Treatment by Regional Block.** Univ. of Pennsylvania, Philadelphia
May 1-31	**Clinical Obstetrics (Harvard University).** Boston Lying-in Hospital
May 1-31	**In-Residence Training in Pulmonary Diseases.** Kansas Univ. Medical Center, Kansas City, Kansas
May 6-8	**Twenty-eighth Annual Meeting, Aero Medical Association.** Shirley Savoy Hotel, Denver
May 6-8	**Application of Histochemistry to Pathology.** Walter Reed Army Medical Center, Washington, D. C.
May 6-9	**American Urological Association.** William Penn Hotel, Pittsburgh
May 6-10	**Surgery of Colon & Rectum.** Cook County Graduate School of Medicine, Chicago
May 6-10	**Introduction to Electrocardiography.** Univ. of Minnesota Center for Continuation Study, Minneapolis
May 6-17	**General Surgery.** Cook County Graduate School of Medicine, Chicago
May 6-17	**General & Surgical Obstetrics.** Cook County Graduate School of Medicine, Chicago
May 6-17	**Clinical Use of Radioisotopes.** Cook County Graduate School of Medicine, Chicago
May 6-17	**Dermatology.** Cook County Graduate School of Medicine, Chicago
May 6-18	**Course II, Internal Medicine.** Cook County Graduate School of Medicine, Chicago
May 6-24	**Cardiology.** New York University, New York City
May 6-31	**Anesthesiology.** New York University, New York City
May 7-9	**Annual Meeting, Wisconsin State Medical Association.** Milwaukee
May 9-11	**Allergy.** Tufts University College of Medicine, Boston
May 13-15	**Electrocardiography.** Tufts University College of Medicine, Boston
May 13-15	**Gastroenterology Review.** Univ. of Colorado Medical Center, Denver
May 13-16	**Annual Meeting, Nebraska State Medical Association.** Hotel Paxton, Omaha
May 13-17	**General Surgery.** Cook County Graduate School of Medicine, Chicago
May 13-17	**Proctology for G-P's.** Univ. of Minnesota Center for Continuation Study, Minneapolis
May 13-17	**Dermatology & Syphilology.** New York University, New York City
May 13-17	**Cystoscopy.** Cook County Graduate School of Medicine, Chicago
May 13-18	**Topics in Clinical Medicine.** Johns Hopkins University, Baltimore
May 13-24	**Surgical Technic.** Cook County Graduate School of Medicine, Chicago
May 13-24	**Pediatrics.** Cook County Graduate School of Medicine, Chicago
May 13-24	**Gastroenterology.** Cook County Graduate School of Medicine, Chicago
May 13-24	**Modern Concepts & Management of Allergy.** Roosevelt Hospital, NYC
May 13-24	**Advanced Course in Urology.** New York University, New York City
May 14-16	**Annual Meeting, Mississippi State Medical Association.** Biloxi
May 15-17	**The G-P in Anesthesia.** Rochester General Hospital, Rochester, N. Y.
May 15-17	**American College of Cardiology.** Washington, D. C.
May 17	**Seminar on Thyroid Uptake Measurement.** Oak Ridge Institute of Nuclear Studies, Oak Ridge, Tennessee
May 17-18	**Selected Chest Radiology.** Tufts Univ. College of Medicine, Boston
May 17-19	**California Heart Association Annual Meeting.** Lafayette Hotel, San Diego
May 18-31	**Fertility & Sterility.** New York Medical College, New York City.
May 20-21	**Arrhythmias.** Indiana Univ. College of Medicine, Indianapolis
May 20-22	**International Voice Conference.** Chicago
May 20-22	**Glaucoma, With Special Emphasis on Gonioscopy.** Brooklyn Eye & Ear Hospital, Brooklyn
May 20-24	**Clinical Bronchoscopy.** Cook County Graduate School of Medicine, Chicago
May 20-24	**Refresher Course in Poliomyelitis.** Children's Medical Center, Boston
May 20-June 14	**General Surgery I (Harvard University).** Massachusetts General Hospital, Boston
May 21-24	**Annual Meeting, Illinois State Medical Society.** Sherman Hotel, Chicago
May 22-24	**Ionic (Acid Base) Balance and Water Balance, and Clinical Applications.** University of Pennsylvania, Philadelphia
May 22-25	**Neurology.** Tufts Univ. College of Medicine, Boston
May 23-24	**Symposium on Alcoholism.** University of Minnesota Center for Continuation Study, Minneapolis
May 23-24	**Colorado Interne-Resident Clinics.** Univ. of Colorado Medical Center, Denver
May 23-25	**Advances in Surgery for Surgeons.** Univ. of Minnesota Center for Continuation Study, Minneapolis
May 25-31	**World Congress of Gastroenterology.** Sheraton Park Hotel, Washington, D. C.
May 27-31	**Pediatrics.** Children's Hospital of Philadelphia
May 28-30	**American Goiter Association.** Hotel Statler, New York City



UNIVERSITY ISSUE

Following their annual custom, the faculty members of the SUI College of Medicine have contributed all of the scientific articles that appear in this April issue of the JOURNAL.

Their papers, this year, compose a symposium on intracardiac surgery, and they show that our College of Medicine is keeping abreast of the leaders in that sector of medicine, the one where most noteworthy progress is currently being made. Their progress reports will serve to confirm our conviction that the undergraduates, internes and residents in training at Iowa City are receiving the most up-to-date of medical educations, and that in addition they are being inspired by some of the most resourceful and energetic of leaders.

The editors of the JOURNAL wish, in particular, to thank Dr. E. W. Scheldrup and the members of his committee for planning and assembling the symposium.

CARDIAC SURGERY IN IOWA

This issue of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY is concerned with cardiac surgery. It is aimed at making the physicians of Iowa aware of some of the work going on in our state.

Many of us have been concerned over the recent campaigns around Iowa to raise from $3,000 to $5,000 to send people away to get cardiac surgery done. We have been concerned, first, because apparently there are physicians here in Iowa who do not realize the developments that have occurred in their own state in the field of cardiac surgery. Since 1949 (when a total of 12 cases were done) the Department of Surgery at SUI has performed about 550 cardiac operations. In addition, an excellent team has been organized in Des Moines at the Iowa Methodist-Blank Memorial Hospital. This team has shown unusual ingenuity and competence, and we are delighted with the progress it has made and the caliber of work it has done. As time goes on, there will undoubtedly be other groups organized.

What is more disturbing, however, is the implication conveyed by these fund-raising campaigns that the medical profession demands extremely large fees before a patient can get surgery. The facts are, as we know, that no one needs go without expert medical care in Iowa merely because he cannot afford to pay a large fee. When the physicians of our state spend so much time and energy working either for modest fees or for none at all, it is unfortunate that it is thought necessary to collect large sums of money to provide for cardiac surgery.

The physicians of Iowa should investigate what is available in their own state before such campaigns are started. Except in rare instances, all operations for correction of congenital cardiac defects that are being done elsewere in the country can now be done in Iowa.

—NORMAN B. NELSON, M.D., Dean
SUI College of Medicine

DRUGS

Doctors, nowadays, are accustomed to take for granted that the prescriptions they write will be filled in a proper manner, entirely as they have directed. The current practice differs markedly from that to which our predecessors were accustomed, in that the vast majority of prescriptions now call for prefabricated medications. The availability of these rigidly standardized preparations has undoubtedly provided better drugs for our patients.

Processing a certain drug may require the responsible manufacturer to carry out as many as 250 separate control tests to insure the reliability of his product. No longer can "equivalents" be substituted in the preparation of these articles. In consequence, physicians can expect that the potency, compatibility, purity and quantity of the active ingredient will be as specified. In addition, the manufacturer must take pains as regards solubility and disintegration time, size of the product, choice of the vehicle or base used, possibility of allergy or other source of irritation, the pH, tonicity and caloric value, melting point, surface tension, viscosity, flavor, ease of application and removal, and changes that may take place during storage. He must also consider sustained-release problems and the possibility of enteric coating of the drug. He is faced with the problem of attractive packaging of his product, and he must make certain that control numbers and expiration dates have been clearly marked. Finally, reliable pharmaceutical companies spend much effort and money in research involving quality and manufacturing control.

Perhaps it is high time we took some cognizance of the efforts of our drug manufacturers, and expressed in some way our appreciation for their diligence.

Help your central office to maintain an accurate mailing list. Send your change of address promptly to the JOURNAL, 529-36th Street, Des Moines 12, Iowa.

THE ESSENTIAL NATURE OF ESSENTIAL HYPERTENSION

Fowler[1] says, "If we call something *essential* we have in mind a whole that would not be what it is if the part in question were wanting; the *essential* thing is such that the other thing is inconceivable without it." Medically, however, the word *essential* is a relic of days when a physician was expected to use words incomprehensible to others. It has survived its tautologous use because it has come to mean "We don't know what causes this."

Such is the meaning of the word *essential* when it is used to identify a type of hypertension. Pickering[2] implies that there is a difference of degree, rather than of kind, between a person whose blood pressure is "normal" and those who sustain levels which are "greatly elevated," and that vascular disease is an incidental result of the increased pressure. But most workers tend to feel that there is a difference of kind as well as of degree. As the problem presents itself to the clinician, the number on the sphygmomanometer is certainly not as important as whether the patient is sick with hypertensive disease or whether he is well in spite of his high blood pressure.

For all practical purposes, of course, elevation of the diastolic blood pressure is due to arteriolar constriction. Constriction of the arterioles may be due to hormones of different types (norepinephrine, renin, VEM—i.e., vasoexciter material of Schorr—and perhaps estrogens and thyroxin) as well as to nervous stimulation, and it is difficult to say which cause is most important in a given patient. The final result, hypertension, is much like a flooding river which is fed by many brooks. The physician is in the position of a watcher standing on a down-stream bridge who cannot judge the relative importance that those tributary rivulets may have had in producing the flood.

For the past three years, physicians have been bombarded with testimonials presented by the representatives of the various pharmaceutical firms. Each of the companies has a product that it maintains is a "cure" for hypertension. Excellent research in both animal and human subjects has shown that each of the agents currently is capable of reducing blood pressure that has been elevated as a result of a defined, known and specific cause.

When considering treatment for a patient, it is important for the physician to remember that no one agent will be effective in every case, and particularly, that no one dosage schedule will help every patient. It is even more important for him to recall that the *essential* nature of hypertension is that it is "essential," and that a drug which will perform a specific pharmacologic task will not necessarily be useful in treating a complex disease.

1. Fowler, H. W.: Dictionary of Modern English Usage. London and New York. Oxford University Press, 1950.
2. Pickering. G. W.: Concept of essential hypertension. Ann. Int. Med., 43: 1153, (Dec.) 1955.

SERUM KILLS LYMPHOMAS IN MICE

At Cornell University Medical College, Dr. John G. Kidd, Dr. Michael Haddad and their lay assistants have reported nearly 100 per cent success in curing lymphatic cancer in mice by means of injections of guinea pig serum.

The cancers hitherto have invariably killed mice within 30 days, and the experimental animals were shot through with disease and obviously on the downgrade before their bellies were filled with guinea pig serum. They immediately started to recover, and were healthy by the time the members of the control group died.

Since serum from human beings, horses and rabbits failed to produce a like effect, it is presumed that guinea-pig serum alone contains a "Factor X" that fights that particular type of cancer in that particular sort of animal. Furthermore, it is effective only *in vivo*, and fails in culture tests. There is as yet no means of knowing whether or not the treatment will be effective in human cases.

RABIES VACCINE

Eli Lilly & Company claims to have developed a safer rabies vaccine than has previously been available. It is made from embryonated duck eggs, which contain little or none of the myelin which is contained in all conventional vaccine of brain origin and which is believed to be the causative factor in rabies treatment paralysis. During clinical trials, Lilly reports, even local reactions have been fewer and milder than those usually encountered with vaccine made from brain tissue.

The new vaccine of duck-embryo origin is said to produce antibodies in practically all patients by the tenth day. The early appearance of antibody compares favorably with results reported by investigators using the older type of vaccine.

A complete prophylactic treatment consists of 14 doses, given subcutaneously on successive days. If the biting animal is not definitely known to have been rabid, and hasn't yet been tested, the firm implies that there is no particular reason why a physician shouldn't start administering the series of injections. For that purpose it intends marketing ampules in packages of seven, rather than 14.

Attend the Sessions of
The House of Delegates
Sunday, April 28, 1:00 p.m.
Wednesday, May 1, 7:30 a.m.
All ISMS Members Are Welcome



Blue Cross
Blue Shield



Blue Shield—The Forward Look

Blue Shield, if it is best to serve the doctor and the public, needs to be a leader in the voluntary health movement. By that statement we do not imply that Blue Shield should have more people protected than all commercial insurance carriers combined, but rather that it should be a leader in setting a pattern of benefits which most nearly fits the economics of medical practice by the private practitioner.

The Iowa Relative Value Schedule provides a sound foundation upon which to build a satisfactory Blue Shield Plan, offering various payment schedules which can be purchased by the public, dependent upon their ability to pay for medical care.

A low premium plan is necessary for the low income family if medicine is to continue offering a discount program to assist these people. Similarly, other plans can be offered for those of the population who are financially able to pay the customary fee for professional services rendered. If Medicine forgets that lower income group which composes approximately one-third of our population, Medicine can expect those people to demand financial aid in meeting their medical care costs.

Deductible and co-insurance features can be applied so as further to reduce the costs, but one must remember that the patient must know in advance the fixed dollar limit or maximum liability to be incurred in order that he may intelligently select between a full service program and a known deductible or co-insurance plan at reduced cost.

Multiple offerings (cafeteria style) is ultimately the only way to discover what type of coverage the people really want and what price they are willing to pay to satisfy their wants.

THE JOURNAL *Book Shelf*



BOOKS RECEIVED

CORONARY HEART DISEASE, by *Milton Plotz*, M.D. (New York City, Paul B. Hoeber, Inc., 1957. $12.00).

THE CLINICAL MANAGEMENT OF VARICOSE VEINS, Second Edition, by *David W. Barrow*, M.D. (New York City, Paul B. Hoeber, Inc., 1957. $6.00).

RADICULAR SYNDROMES, WITH EMPHASIS ON CHEST PAINS SIMULATING CORONARY DISEASE, by *David Davis*, M.D. (Chicago, The Year Book Publishers, Inc., 1957. $6.50).

THE CARE OF THE EXPECTANT MOTHER, by *Josephine Barnes*, M.A., D.M., M.R.C.P. (New York City, The Philosophical Library, Inc., 1956. $7.50).

CURRENT THERAPY, 1957, ed. by *Howard F. Conn*, M.D. (Philadelphia, W. B. Saunders Company, 1957. $11.00

BOOK REVIEWS

CLINICAL MEMORANDA ON ECONOMIC POISONS, by the U. S. Department of Health, Education and Welfare. (Atlanta, April 1, 1956).

This booklet prepared by the U. S. Public Health Service deals with the toxic hazards to man in the pesticides now so frequently used both on the farm and in the home. It is a concise, readable compilation of up-to-date information concerning the most generally used of these preparations.

The various pesticides are first divided into the chemical classes to which they belong. Then the individual characteristics of each of them are further described. The commercial use of each pesticide and its physiologic actions are given. The signs and symptoms of poisoning are given in practical detail, along with the laboratory findings, pathology, differential diagnosis and latest knowledge as to treatment.

These memoranda are extremely valuable to internists, pediatricians and family physicians, especially those who practice in rural areas.

As a public service, the booklet is being made available upon request by the National Agricultural Chemical Association. All physicians are urged to request their free copies by writing to the Association. The address is 1145 Nineteenth Street N.W., Washington 6, D. C.—*S. P. Leinbach*, M.D.

CLINICAL USE OF RADIOISOTOPES, by *William H. Beierwaltes*, M.D., *Philip C. Johnson*, M.D., and *Arthur J. Solari*, M.S. (Philadelphia, W. B. Saunders Company, 1957. $11.50).

This concise and well-written text should be most eagerly received by specialists and residents using radioisotopes. The common uses of isotopes are thoroughly discussed, and the controversial points in diagnosis and therapy are well presented. The less commonly used isotopes and procedures are presented in less detail. Throughout, the clinical applications are excellent.

Other subjects presented include basic physics of radioactivity, health physics, and suggestions for the planning and instrumentation of a clinical radioisotope unit. The indexing is excellent, and the comprehensive and up-to-date bibliography is most welcome.—*T. A. Burcham, Jr.*, M.D.

LAKESIDE LECTURE SERIES, VOLUME I (Milwaukee, Lakeside Laboratories, Inc., 1956).

This paper-backed pamphlet is another in a group of scientific books published by drug houses. Within its 104 pages are included transcripts of five annual lectures given by prominent personages "in the interest of clinical investigation and the newer aspects of medical research." The subject matter includes widely varied topics such as "Metallic Content of Cardiovascular Structures and Related Tissues" and "Physiologic Basis for the Therapy of Gastrointestinal Disorders." A short bibliography of each speaker precedes his article.

The material presented represents speculative conclusions derived from scientific work presented by the authors. They are trying to look into the future at such problems as cardiac contraction, atherosclerosis and the etiology of congenital heart disease. Their conclusions are couched in biochemical, patho-physiologic terms which were in some instances too scientific for this reviewer. Too many typographical errors sprinkle the pages.

The pamphlet would appear to have been designed for those interested in the probable future course of scientific medicine.—*D. A. Glomset*, M.D.

THE PHYSICIAN-WRITER'S BOOK: TRICKS OF THE TRADE OF MEDICAL WRITING, by *Richard W. Hewitt*, M.D. (Philadelphia, W. B. Saunders Company, 1957. $9.00).

Constant efforts have been made to improve the quality of medical writing. Here is a book, prepared by a well-qualified authority, which should be in the hands of every aspiring physician who is preparing a medical paper. The tricks of the trade have been carefully outlined, from the choosing of a subject to the phrasing of the final paragraph. Rhetoric, grammar, tables and illustrations, and ethics all come in for their share of consideration. Excellent examples have been appended to almost all of the chapters.

The author has dedicated his book to the members of the American Medical Writers' Association, and all of them should appreciate the excellence of this treatise. We sincerely trust that the book will accomplish its avowed purpose.—*Everett M. George*, M.D.

MENTAL ILLNESS

STANDARDS FOR MENTAL HEALTH CLINICS IN IOWA

The following outline has been prepared by the ISMS Subcommittee on Mental Health and has been approved by the ISMS Executive Council.

PURPOSES OF MENTAL HEALTH CLINICS

1. To help prevent nervous and mental disorders.
2. To provide aid and treatment to persons suffering from personality and/or behavior disorders.
3. To counsel with the patient and members of his family on an outpatient basis.
4. To promote mental health education and the conservation of mental health.

PREREQUISITES TO ESTABLISHMENT OF A CLINIC

1. A board of directors should be appointed to work out the details of clinic establishment. The board of directors should be representative of the county or counties which will participate in the program. Membership should be from (a) board of supervisors, (b) county medical society, (c) schools, (d) courts, (e) clergy and (f) industry.
2. Community support should be secured and sufficient financial aid provided to assure operation of the clinic on a minimal basis for one year, and reasonable assurance should be secured that financial support will be continuing. (a) This is essential to proper planning. (b) It offers some security to prospective employees.
3. Co-sponsorship of the county medical society should be secured *before* the actual establishment of the clinic. (a) Ask for county medical society approval of the fee schedule to be used—preferably a sliding scale as regards both income and number of members in the family. (b) In counties where there is no resident psychiatrist, the clinic should not be established until a psychiatrist/director can be obtained.
4. Mental health clinics should be established on a statewide priority basis so that there may be maximum use of the limited numbers of trained personnel, especially psychiatrists.

MINIMAL STAFF REQUIREMENTS

1. A psychiatrist should be engaged on a part-time basis. Do not obtain services on a consultant basis. Ideally, the psychiatrist should be employed full-time. (a) The part-time psychiatrist shall be given the authority and responsibility of clinic director. This designation should preferably be made by the medical society. (b) Any ethical doctor in the local medical society shall have the right and be welcomed to work in the mental health clinic.
2. A psychiatric social worker should be employed, preferably on a full-time basis.
3. There should be a well-qualified, full-time receptionist-stenographer capable of maintaining necessary case histories and full administrative records as required by the psychiatrist.
4. As the work load increases, a psychologist should be hired to assist the psychiatrist as a therapist and work under the doctor's direction.

Note: Eventually the majority of the M.D.'s time will be expended in consulting and supervising the social worker, plus conducting diagnostic and evaluative interviews. Of necessity, therapy will be curtailed under the part-time set up, and the psychotherapy cases will be referred to other psychiatric services in the community.

DUTIES OF PERSONNEL

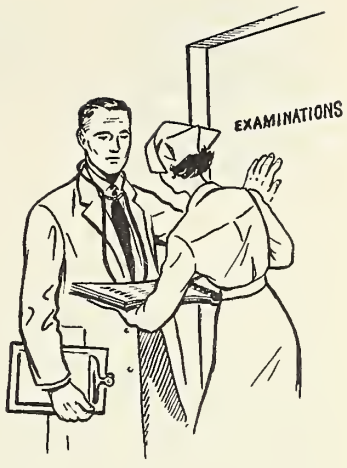
1. *Psychiatrist:* (a) As medical director, he should be responsible for the operation of the clinic. (b) All tests, examinations, therapy, etc. must first be requested and approved by the medical director before performance of the service for the patient. (c) Social psychiatric history should be taken as a part of the patient's admission examination. (d) Medical director should require and receive all examinations performed in the center and then evaluate all this information to insure the best possible future treatment for the patient. (e) The medical director will personally supervise all psychotherapy. (f) He will not permit physical therapy to be given at the clinic; if needed, the patient will be hospitalized. (g) He will be responsible for the training of his staff. The board of directors hires personnel upon the recommendation of the psychiatrist/director. (h) He authorizes and audits official letters. (i) At the discretion of the psychiatrist/director, an executive secretary can be appointed.

2. *Psychiatric Social Worker:* (a) She interviews all patients to determine specific problem. If the patient cannot be properly treated at the clinic, the patient will be referred to the proper source of assistance, upon the recommendation of the psychiatrist. (b) She compiles social histories and consults with referral sources. (c) She conducts direct casework interviews and group therapy sessions with patients and relatives. Cases are assigned and supervised by the psychiatrist. (d) She lends leadership to mental health programs and works cooperatively with other agencies for the common social welfare. (e) Under the direction of the psychiatrist/director, the psychiatric social worker having training qualifications will be responsible for the supervision of the students in training from graduate schools of social work and other staff social workers working in the facility.

3. *Clinical Psychologist:* (a) He administers a variety of psychological tests to contribute personality findings in the diagnostic process. (b) He administers intelligence tests and makes reports

(Continued on page 229)

THE DOCTOR'S BUSINESS



Liquidity in Your Estate

HOWARD D. BAKER
WATERLOO

Every business and professional person knows the meaning and importance of liquidity in the everyday management of business affairs—i.e., having assets that can easily and quickly be converted into cash. Liquidity is just as important in the expedient settlement of an estate.

If an estate does not have the cash or liquid assets that are needed, substantial losses may result, and in many cases the entire estate plan will be put in jeopardy.

ESTIMATING THE NEED FOR CASH

People who aren't specialists in such matters are seldom cognizant of the amounts of cash that will be required for the settlement of their estates. Burial and other last expenses, current bills, mortgages and notes will all have to be settled promptly. Income taxes will probably be due on the decedent's final tax returns; there will be court costs and administrative expenses; and finally, federal estate and state inheritance taxes will fall due within a period of 15 to 18 months.

It is obvious that in the case of a relatively large estate, the amount of cash that is required can total thousands of dollars. If there is a shortage of liquid assets, some substantial losses may result. Valuable property may have to be sold in an unfavorable market, or a controlling interest in a business may have to be sacrificed. An estimate of cash needs is thus of prime importance, and the estimate should be as precise as possible.

As a general rule, cash for the settlement of an estate should come from the following sources: savings and checking accounts; life insurance; corporate, municipal and United States government bonds; and other relatively stable and readily marketable securities.

At the time your estate plan is initiated, you should consult with your attorney, your life-insurance agent, your business consultant and your broker before designating the assets to be used for cash needs.

CASH MUST BE AVAILABLE TO THE RIGHT PERSON

In many estates there are sufficient liquid assets, but they may not be available to the proper person. For example, bank accounts and bonds may have been held in joint tenancy with the right of survivorship. Rather than becoming available to the administrator of the estate for the protection of the fixed assets, they may instead pass directly to another person by operation of law.

If a farm or a business is to be liquidated, the administrator or executor should have the right to operate it for a reasonable period of time while he awaits favorable circumstances for its sale. This will be possible only if the necessary funds are available to him. Liquidity will also be a controlling factor in the terms of sale that he can offer to a prospective purchaser, determining whether or not a contract or a mortgage sale can be made.

If the business is to be continued, it is obvious that sufficient ready cash must be provided to insure its efficient operation without requiring the sale of some other asset to provide working cash.

PERIODIC REVISION OF THE ESTIMATE

Liquidity in an estate is not only very important; it is subject to constant change. Therefore, the requirements and the provisions for meeting them should be reviewed and revised periodically by the property owner under the supervision of an experienced attorney and/or financial counselor.

By following this policy, you will assure the realization of your estate plan and provide maximum protection for your loved ones.

Iowa Academy of General Practice

APPRECIATION

The Iowa Academy of General Practice wishes to take this opportunity to express its appreciation to the Postgraduate Medical Studies Department of the SUI College of Medicine for the splendid refresher course for the general physician just presented. The 3½-day conference was well attended and received. Those who attended gleaned many gems of information.

Plans are already being formulated for next year's conference. The program is only one part of the success of such a series of meetings. The other part is the enthusiasm and attendance on the part of the profession. We owe it to ourselves and our patients to partake in such conferences, and the enthusiasm that we show challenges the program committee to do its utmost.

PUBLIC RELATIONS

Nowadays, the term *public relations* is employed by all professions, trades and other groups. Its meaning is broad, for it covers many types of activities. But those activities are all intended to promote harmony—harmony with other organizations, and especially with Mr. John Q. Public. We have always had public relations, though it hasn't always been so designated. That is to say, efforts have always been made toward explaining objectives and making friends. However, the pressure of the times nowadays makes it necessary that harmony be sought more ardently than ever before.

The medical profession is particularly concerned with its public relations, for harmony will be the doctors' greatest defense against socialized medicine. One has only to stop and think of how valuable each new friend of ours can be to us in preserving private practice.

In general, the services of the profession are purchased and utilized by Mr. Public. These services are of varied sorts. There are those offered by the many allied specialty groups, and there are those offered by general practitioners. Since the profession is the seller and Mr. Public is the buyer, it must keep on good terms with him. John Q. Public is a peculiar individual, much different from his forefathers. He has grown accustomed to expecting a great deal—sometimes rightfully so, and at other times not so rightfully.

It is the balance between expecting and deserving that warrants most attention. Mr. Public not only pays our fees but makes contributions to societies that have been established to promote cancer research, heart research and searches for cures of other diseases. The state and federal governments that he helps to maintain also take part in the financing of medical progress. In those ways he helps us doctors in our work. In return we physicians of course provide him medical and surgical care, but if he is to be our friend, we must in addition offer him cordiality. Only thus can we doctors do our part in maintaining the balance.

As physicians, we are individuals—or perhaps it should be said that we are individualists. What one physician does ought not, we feel, be taken as representative of the medical profession as a whole. But we must recognize that such is the case. By greeting Mr. Public courteously over the telephone, any one of us is likely to gain more, as regards good will, than he can by succeeding in a major surgical procedure on Mr. Public's indigent relative. And all of us will share in that good will.

It is necessary for us really to work at this public relations aspect of our practice. Efficient medical care isn't all that we must furnish our patients. Our profession has recognized this fact, and in consequence we have committees on public relations in our county, state and national societies. It is not within the scope of this article to review the projects that have been undertaken by those committees, but merely to call attention to the importance of their activities. Our committees and we as individuals can maintain the balance between what Mr. John Q. Public expects and what he deserves. We should remember that keeping that balance in proper order is our strongest safeguard against socialized medicine.

Attend the IAGP Luncheon
Iowa Room, Hotel Savery
12:15 p.m., Tues., Apr. 30
During the ISMS Annual Meeting
Make advance reservations by writing
to the IAGP office.

STATE DEPARTMENT OF HEALTH

Edward G. Zimmer
COMMISSIONER

DRUGS AND BIOLOGICALS AVAILABLE from the State Department of Health

VENEREAL DISEASE CONTROL

Procaine penicillin (aqueous or oil suspension)—60,000 units for gonorrhea cases; 6,000,000-12,000,000 units for syphilis cases, depending on diagnosis.

Achromycin (250 mg. capsules)—distribution limited to those medically indigent syphilis cases in which penicillin sensitivity has been definitely established.

These drugs are available without cost to physicians for the treatment (control) of reported cases of venereal disease. Requests for drugs should be made by physicians directly to the Venereal Disease Division, Iowa State Department of Health, and must be accompanied by case reports.

SKIN-TEST MATERIALS

Tuberculin, old tuberculin and histoplasmin are furnished on request to physicians for any persons, regardless of ability to pay.

IMMUNIZING AGENTS

Triple toxoid (diphtheria, tetanus and whooping cough)
Diphtheria-tetanus toxoid
Typhoid vaccine triple (typhoid, para A and para B)
Poliomyelitis vaccine (Salk)
Smallpox vaccine

This group of immunizing agents is distributed through the usual patterns of sending it to any physician for any persons who are indigent or whom he deems to be medical hardship cases. Funds for the purchase of poliomyelitis vaccine by the State Health Department come from two sources. Special federal funds made available by Congress in 1955 are earmarked for use only by persons under 20 years of age and for pregnant women of any age. State funds and other grant funds also available are earmarked for use only for indigent or medical hardship persons.

The triple toxoid, diphtheria-tetanus toxoid, and smallpox and poliomyelitis vaccines will also be sent to counties, towns or cities for school immunization programs, provided that the Division of Maternal and Child Health has received a statement that the county medical society of that area has approved the school immunization program. Requests for these biologics for school programs should be sent to the Division of Maternal and Child Health.

Typhoid vaccine is ordinarily not used as a part of school immunization programs. Physicians may request it for indigent and medical hardship cases, and for any persons who have been or may possibly have been exposed to a known case of typhoid fever or to a known typhoid carrier. Typhoid vaccine is also available for use in "disaster conditions."

RABIES CONTROL

Rabies vaccine (Pasteur treatment material)
Anti-rabies serum

These two reagents are sent directly to physicians upon request. The anti-rabies serum can be administered only to those persons who have been bitten about the face and neck or who have extensive bites on other parts of their bodies, and for such of those cases as can be given the material within three days after receiving the bites.

If the physician states that the patient cannot pay for the rabies vaccine, he is not billed for it.

DENTAL MATERIALS

Sodium fluoride solution 2%
Sodium fluoride powder

These materials are furnished for topical application to children's teeth. They may be obtained by any dentist from the Division of Dental Hygiene, State Department of Health.

GAMMA GLOBULIN

See the detailed statement published in the January, 1957, issue of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY (47:47).

TUBERCULOSIS CONTROL IN SIOUX CITY

The following summaries are taken from the 1956 Annual Report of the Sioux City Health Department. They are printed here for two reasons. They show that our local health departments are aware that tuberculosis is still a problem, and they demonstrate that much time and effort are required for the conduct of organized control procedures.

New, active tuberculosis cases reported to the Sioux City Health Department for the first time during the year 1956 30
Reactivated cases of tuberculosis reported to the Sioux City Health Department during 1956 12
Tuberculosis patients who died during 1956 13
- Died from tuberculosis 10
- Died from other causes 3

Inactive and healed tuberculosis cases reported for the first time in 1956 . . . 20
Suspects and undetermined cases reported for first time in 1956 17
Active tuberculosis cases followed up during 1956 121
Inactive and arrested cases followed up during 1956 82
Sioux City and Woodbury County patients given care at Oakdale during 1956 . . . 33
Patients given care at River Heights Sanatorium, Sioux City, during 1956 (the total was 4,561 patient-days) 30
Patients attending chest clinic 89
Clinic visits 130
Mantoux tests given in Sioux City and Woodbury County school and college programs 3,311

SIOUX CITY MINIATURE X-RAY PROGRAM, MAY, 1956

The miniature x-ray case-finding program summarized below was a joint project of the Sioux City Health Department, the Woodbury County Medical Society, the Woodbury County Tuberculosis and Health Association and the Iowa State Department of Health. The figures given do not include the miniature x-ray program conducted in Sioux City for teachers and other school personnel. In that survey, 831 miniature x-rays were taken and 40 cases were followed up.

Miniature x-rays taken 12,667
New active tuberculosis cases found (miniatures followed up by examination and large x-rays) 5
Inactive cases found 8
Healed cases found 7
Cases reported as "undetermined" . . 7
- Large x-rays taken; patient to be kept under observation 3
- Reports on large x-rays "negative" . 1
- Reported as "tuberculoma" . . 2
- Large x-ray reported showing "cancer of lung" 1

Suspects refused to have large x-rays taken 2
- Old active case on file in Health Department 1
- X-rayed later; report "negative" . 1

Suspect died before large x-ray could be taken; cause of death: "emphysema" 1
Follow-up x-rays showing "cancer of lung" 5
Abnormal hearts followed up . . . 109
Total cases referred for follow-up . . 278

MORBIDITY REPORT FOR MONTH OF FEBRUARY

Disease	*1957 Feb.*	*1957 Jan.*	*1956 Feb.*	*Most Cases Reported From These Counties*
Diphtheria	0	1	6	
Scarlet Fever	182	119	136	Clay, Des Moines, Polk, Woodbury
Typhoid Fever	1	3	2	Polk
Smallpox	0	0	0	
Measles	1212	949	795	Linn, Mitchell, Polk, Woodbury
Whooping Cough	8	45	33	Washington
Brucellosis	8	9	14	Dubuque
Chickenpox	899	887	1039	Linn, Polk, Pottawattami, Scott
Meningococcus Meningitis	2	1	1	Cerro Gordo, Polk
Mumps	474	487	159	Des Moines, Linn, Scott
Poliomyelitis	2	0	3	Dubuque, Tama
Infectious Hepatitis	18	31	47	Pottawattamie, Scott, Van Buren
Rabies in Animals	17	21	15	Linn, Scott, Van Buren, Washington
Malaria	0	0	0	
Psittacosis	2	0	0	Clinton, Wright
Q Fever	0	0	0	
Tuberculosis	23	19	36	For the State
Syphilis	67	89	16	For the State
Gonorrhea	45	43	85	For the State
Histoplasmosis	0	1	0	
Food Intoxication	0	0	0	
Meningitis (type undet.)	1	1	0	Emmet
Diphtheria Carrier	0	0	0	
Aseptic Meningitis	0	0	0	
Salmonellosis	0	2	2	
Blastomycosis	0	0	0	
Tetanus	0	0	0	
Chancroid	0	0	0	
Coxsackie B-5	0	0	0	
Encephalitis	0	3	0	
Influenzal Meningitis	0	2	1	
Amebiasis	1	1	2	Butler
Clostridium Welchii	0	0	0	
Shigellosis	0	0	3	

GASTROENTEROLOGY COURSE AT DENVER

Twenty-eight nationally known authorities will compose the faculty at a short course in gastroenterology that is to be offered by the University of Colorado May 13-15, at Denver. The annual meeting of the Gastroenterological Association will be held at the Broadmoor Hotel in Colorado Springs immediately following the Denver course.

Iowa Maternal Mortality, 1953-1954

Cases Edited and Summarized by the Maternal Mortality Reviewing Board

DEATHS FROM TOXEMIA OF PREGNANCY

CASE NO. 69

This patient (age 33; para 3; preeclampsia) had adequate prenatal care. In the eighth month of her pregnancy she gained 4½ pounds in one week, her blood pressure became elevated to 150/100 mm. Hg., and she showed a trace of albumin and some edema. She was placed on a salt-free diet, restricted fluids and ammonium chloride.

She was seen again two weeks later. During the interval, she had lost eight pounds. Her blood pressure was down to 120/80 mm. Hg., her urine was negative, and her physician felt that she had completely recovered. When she was seen again during the following week, there was no change in her condition.

Twenty-six days elapsed before she saw the physician again. At that time she felt that there was a decrease in fetal activity. Although she had not gained any weight, her blood pressure was 160/135 mm. Hg. and she had 2+ albumin. She did not complain of any pain, but felt tired and had had some abdominal cramps. She was sent home on a salt-free diet with ammonium chloride.

The following day, a neighbor found her unconscious on the floor. Both cheeks were swollen, and her breathing was stertorous. The physician was called, and she was transferred to a medical center 125 miles away.

Upon admission to the hospital, the patient had a right-sided hemiplegia and was unconscious. The membranes had ruptured, the cervix was dilated one or two centimeters and fetal heart tones were present. The urine showed 4+ albumin, and the blood pressure was 202/120 mm. Hg. A spinal puncture produced bloody fluid under pressure. The blood urea nitrogen was 33.7 and the uric acid 4.05 mg. Adequate consultation was held, and rigorous treatment was instituted, but the patient did not respond and died about 12 hours after admission.

This death was related to pregnancy, and it was preventable.

It was felt that when this patient first showed signs of toxemia, she should have been intensively treated, and that she should have been closely observed during the remainder of her pregnancy. After this episode, she went for a period of 26 days without being seen by the doctor. When she did return to him, she had moderately severe symptoms, and immediate hospitalization was indicated. Though she apparently developed a cerebral hemorrhage, which is one of the complications seen in toxemia of pregnancy, she was transported a considerable distance in coma. It is felt that such a case could have been adequately treated in a small institution, and that eclamptic patients do not tolerate the hardships of a long trip.

By the time she was admitted to the hospital, there was little that could be done for her.

CASE NO. 84

Detailed information on the prenatal care of this patient (age 20; para 0; preeclampsia) was not available to the Board, but her family physician said that her condition had been normal prior to her final illness.

This woman had almost reached her expected date of confinement when she became ill and vomited. The physician was not called until the following morning, when her husband had found her in a cold sweat, with her left arm and leg motionless.

She was hospitalized immediately. Her blood pressure was elevated, and she had some albumin in her urine. A spinal puncture was done, and the fluid was found to be bloody and under enormous pressure. She could not be aroused from her coma.

She was transferred to a large medical center, and on her arrival there, her blood pressure was 210/150 mm. Hg., her pulse was 110/min., and she had 4+ albumin but no edema. She moved all extremities when they were stimulated, but otherwise was perfectly quiet in coma. Three hours after admission, she stopped breathing, her blood pressure dropped and her pulse became elevated. Fetal heart tones disappeared.

The patient was given oxygen by pressure, and as soon as possible, she was put into a respirator with an airway trachea. She went into spontaneous labor on the following day and delivered a full-term stillborn baby. No anesthesia was used for the delivery. Following delivery, the patient made no attempt at respiration. Her renal output was low, and she was given vasopressor drugs and ample fluids. Her blood pressure stayed low, her pulse remained weak and she died about 48 hours after delivery.

Autopsy revealed massive hemorrhage in the third ventricle and atelectasis in both lungs.

This death was related to pregnancy, but it was not preventable. Although we do not know the complete details of the patient's early history, her final illness was no doubt a rapidly fulminating toxemia, resulting in an intracranial hemorrhage.

There is a possibility that she could have had a congenital aneurysm which ruptured either spontaneously or as a result of a sudden toxemia with hypertension.

CASE NO. 97

This patient (age 22; para 0; preeclampsia) had had early and adequate prenatal care, and showed no untoward symptoms until the seventh month of her pregnancy. Then she complained of a slight headache. Her blood pressure was 140/80 mm. Hg. and her urine showed a trace of albumin. Her total weight gain to that point in her pregnancy was nine pounds. She was sent home on bedrest with sedation, and the physician kept in touch with her, being aware of an impending problem.

Two days later, it was found that her symptoms were progressing, and she was sent to the hospital. Then, she had a blood pressure of 166/124 mm. Hg. and 2+ albumin in her urine. She was given sedation and hypertonic glucose intravenously. Her blood pressure continued to rise, and her urinary output decreased. A consultant advised continuing the medical therapy.

Fourteen hours after the patient's admission, it was felt that she showed no improvement, and that the uterus should be emptied. Because the cervix was thick and undilated, a cesarean section was elected. Eighteen hours before surgery, the patient received a total dosage of 26¼ grains of sodium amytal, plus ¼ grain of morphine. A section was done, with sodium pentothal and cyclopropane anesthesia. A live baby weighing 2,500 Gm. was delivered. During the surgery the patient's blood pressure was about 160/100, and afterward it varied from 130/78 to 196/110 mm. Hg.

The patient never reacted from the anesthesia, her condition deteriorated and she died 5½ hours after surgery.

This death was related to pregnancy, and it was preventable. Discussion of the management of this case will be divided into five parts.

A. Diagnosis. The diagnosis of impending toxemia was made promptly. However, after reviewing an increasing number of similar cases, the Reviewing Board feels that even in the absence of other symptoms, any pregnant woman who spills albumin must be hospitalized immediately and put on a toxemia regime. Much could have been gained during the 48 hours that this patient spent at home.

B. Conservative Treatment. Even though the uterus must be emptied, the patient should first have the benefit of toxemia regime, which usually cannot be obtained in less than 24-36 hours. In the great majority of cases, the uterus is ripe for rupture by the thirty-seventh week of gestation, and rupturing the membranes will not interfere with conservative treatment.

C. Sedation. Pulmonary edema is much more likely to occur when sedation has been accomplished by means of barbiturates than when morphine has been used. The total amount of sodium amytal was quite high, and it probably accumulated because of the somewhat deficient urinary output.

D. Fluid Intake. When a kidney has been damaged, the patient should receive only necessary fluids. Since there was a large fluid intake in this case, death from pulmonary edema would seem plausible. Diuretics would have been of no value. Actually, the urinary output was not extremely low.

E. Anesthesia. The role of the anesthetic must not be overlooked. The effect of accumulated sedatives might be deleterious. The Reviewing Board feels that by and large, the choice of spinal anesthesia was unwise in a case of fulminating toxemia. It is the Board's feeling that a local anesthetic would have been safest, and that delivery from below could have been accomplished with practically no anesthesia.

CASE NO. 101

This patient (age 28; para 2; preeclampsia) had had early and regular care during her pregnancy, and no abnormalities were ever found. Four days after the expected date of her confinement, the patient went into spontaneous labor, and a live baby weighing 3,600 Gm. was delivered by low forceps.

The mother received 100 mg. of Demerol for analgesia, and pontocaine with ephedrine for saddle-block anesthesia. The placenta delivered immediately, and the patient received ergotrate.

While being moved to her room, the patient complained of sudden, severe occipital headache, and lost consciousness. There was a slight twitching of her right leg and arm. At that time her blood pressure was 170/70 mm. Hg.

She was given seconal and Demerol. She remained comatose during the night and was incontinent. In the morning, she was still in coma, and was irritable. Her right arm was immobile, but she made irritable and purposeless movements with her other arm and her legs. The Babinski sign was positive bilaterally, and there was a positive Hoffman sign on the left, with sustained clonus in the right foot. Although the blood pressure had been 170/80 during the night, it was 140/70 mm. Hg. in the morning. The eyegrounds and the pupillary reflexes were normal. Consultation was called. During the day, the patient remained essentially the same, and was given 1,000 cc. of five per cent glucose and Demerol. At evening, she had a sudden episode of restlessness, followed by collapse and death.

Autopsy showed a massive cerebral hemorrhage on the left, with a large blood clot on the left lateral ventricle extending into the basal ganglion. The physician certified that the death was due to cerebral hemorrhage, and noted the pregnancy in the

second part of the death certificate as a related finding, rather than as an underlying cause of death.

This death was related to pregnancy, but it was not preventable. This patient apparently died as the result of a cerebral hemorrhage which came on following a sudden hypertension after delivery. No records of her blood pressure during labor were submitted, and the hypertension could have started at that time.

If the blood pressure is not taken during labor, a fair number of hypertensions will be missed. Following delivery it is not unusual for a hypertension to become exacerbated, as it was in this case. There is a possibility that the ergotrate had something to do with the hypertension. Some obstetricians feel that ergnovine will cause a hypertension, especially if it is given when the patient is under spinal anesthesia.

According to the death certificate, the pregnancy had no part in causing death. It has been recommended that this certificate be amended to show the pregnancy in Section b of Part I, for this was truly a maternal death.

case no. 102

This patient (age 27; para 0; preeclampsia) had had early and adequate prenatal care during the first seven months of her pregnancy. Then she came to the doctor because she had a cold. At that visit, her weight was 146 pounds, her blood pressure was 140/84 mm. Hg., and her urine was negative. On her next visit, a month later, her weight was 149 pounds, her blood pressure was 160/90 mm. Hg., and her ankles were edematous. The doctor placed her on ammonium chloride and expressed concern about her condition, but because she felt well, she didn't obey his orders. When she was seen three days later, she weighed 154 pounds—i.e., she had gained 18 pounds since the start of her pregnancy—her blood pressure was 160/86 mm. Hg., her urine contained 4+ albumin and there was marked edema in her feet. Again she felt good and refused to follow the doctor's advice.

Three days later, on her return home from a carnival, she was found unconscious and cyanotic. She was admitted to a hospital. Her respirations were slow, her pupils were dilated and both her arms were flaccid. No fetal heart tones were heard. Her blood presure was 174/128 mm. Hg., but it dropped during the night. A catheterized specimen of urine contained 4+ albumin. Medical treatment was instituted, but the patient did not respond, and expired the following morning.

This death was related to pregnancy and it was preventable. When albumin was first found in the urine of this patient, immediate hospitalization should have been effected, and the physician himself should have taken a more positive attitude in persuading the patient to follow his advice. The patient should then have had rigorous treatment, and if her condition did not improve, her pregnancy should have been terminated.

case no. 58

This patient (age 36; para 4; toxemia of pregnancy superimposed on chronic hypertension) made her first prenatal visit when she was about five months pregnant, and did not return for two months.

She had a history of asthma and hay fever, and had been taking dexedrin to give her pep. Two years before, she had been examined and found to have a blood pressure of 170/90 mm. Hg., but she had never had cardiac failure.

On her second prenatal visit, it was found that she had 1+ albumin and was suffering from acute asthma. Two weeks later, she became cyanotic, and had edema of the lower extremities. Her blood pressure was then 160/80 mm. Hg., and she showed signs of acute left ventricular failure. She was hospitalized and given cortisone and digitalis. Three days later, she went into spontaneous labor and delivered a 1,600 Gm. live infant without anesthesia.

Her condition gradually became worse, and two weeks after delivery she was transferred to a large medical hospital. Upon admission there, her blood pressure was 170/120 mm. Hg., her pulse was 120/min., she had marked edema of the lower extremities and she was cyanotic. There was congestion in her lungs, her heart was enlarged and there was a rapid gallop rhythm. Her urine showed 4+ albumin. The blood chemistry and electrolytes of her blood were within normal limits, and the blood count was normal. An electrocardiogram indicated myocardial disease. Digitalis was continued, and she was given a mercurial diuretic and oxygen. For a short time there was an apparent improvement in her condition, but four days after her admission (25 days postpartum) she suddenly died.

This death was related to pregnancy. Whether or not it was preventable is open to question. The prenatal care given this patient was obviously inadequate, because of neglect on the part of the patient. When she was first seen, she was presumably hypertensive. When a hypertensive patient becomes pregnant, she should have a complete evaluation (nitrogen retention, EKG, etc.), and it should then be determined whether or not she should continue with her pregnancy. Termination of the pregnancy in this case might not have extended the patient's life span appreciably, but it might have given her another year or so.

case no. 41

This patient (age 39; para 1; eclampsia) reported to her physician in the second month of her pregnancy and continued to make regular visits. Her blood pressure ranged between 140 and 145/80

mm. Hg. On her fifth prenatal visit, it was 175/90 mm. Hg., and the physician recommended that she enter a hospital. She refused. On the next two visits, her blood pressure readings were 180/100 and 195/100 mm. Hg.

About three weeks before the expected date of her confinement, the patient went into spontaneous labor, and when she entered the hospital, her blood pressure was 200/100 mm. Hg. Soon after admission, she had a convulsion, and was given Demerol and sodium luminol. Within two hours after her admission, she delivered a 3,400 Gm. stillborn infant. There was a moderate second-degree laceration, and the placenta was expressed without difficulty. She was given ergotrate.

Within 30 minutes after delivery, there was an estimated blood loss of 1,000 cc. Consultation was called. Extreme edema of the vagina made hemostasis difficult. Within the first eight hours postpartum, she received 2,000 cc. of glucose in water and 2,000 cc. of whole blood. Her condition remained poor throughout the remainder of her course.

Her urine continued to show 4+ albumin, and her NPN ranged from 119 to 150. Her urinary output following delivery was 365 cc. in 24 hours, and it decreased until it was only 60 cc. But then, on the eighth day her output was 1,000 cc., and on the ninth day 1,400 cc. She was given an average of 2,000 to 3,000 cc. of intravenous fluids each day—mostly glucose in water, but occasionally Ringer's solution. She also received cortisone daily.

Her blood pressure remained elevated, and she remained semi-comatose and confused. On her eleventh day postpartum, she had a large urinary output, hard to estimate because of her incontinent condition, and she presented a picture of acidosis. Intravenous sodium bicarbonate was then administered. On that day, she died.

This death was related to pregnancy, and it was preventable.

Treatment, including hospitalization, should have been instituted when the patient first showed an increase in blood pressure. In spite of the patient's resistance, the attending physician could have assumed more responsibility for seeing to it that she followed his advice.

It was thought that possibly the lack of potassium was a contributing factor in her death. Apparently her kidney function was beginning to return, and if she could have been carried a few more days, she no doubt would have responded to treatment.

The important factor in this case remains that the patient should have been hospitalized much earlier, and the pregnancy should have been terminated before she got into trouble.

CASE NO. 48

This patient (age 22; para 0; eclampsia) had reported for prenatal care early in her pregnancy, and was regular thereafter in her visits to her doctor. From the third until the eighth month, she had no untoward symptoms and had a weight gain of 23 pounds. By this time, she was being seen weekly. The following week, she gained four pounds, her blood pressure was 120/80 mm. Hg., and her urine showed 2+ albumin. The next week she had not gained any additional weight, but her blood pressure was elevated to 130/80 mm. Hg., and her urine contained 2+ albumin. Preeclampsia was diagnosed at that time.

She went home for a week, and upon her next visit it was found that she had gained 10 pounds. Her blood pressure was 140/90 mm. Hg., there was 4+ albumin in the urine and she had some edema. She was admitted to the hospital and treated with barbiturates, magnesium sulfate and ammonium chloride. For the first three days, she improved, losing 10 pounds. Her edema decreased, and her blood pressure ranged between 130/90 and 150/104 mm. Hg. The urine continued to show 4+ albumin.

The following day, the patient became nauseated and complained of epigastric pain and severe headache. Consultation was called, and it was decided that delivery was essential. The cervix was long and firm, and when one minim of pituitrin had elicited no response, a cervical section was done under spinal anesthesia. A 2,100 Gm. live baby was delivered.

Three hours after surgery, the patient had a convulsion, and had a second one within an hour. She was given morphine and oxygen. Her blood pressure suddenly dropped to 100, but there was no evidence of bleeding. An internist was called for consultation. The patient was given fluid and plasma, and she responded temporarily, but her condition remained poor. She developed anuria, her condition deteriorated and she died 2½ days after delivery.

Autopsy confirmed a diagnosis of toxemia of pregnancy, with glomerulonephrosis, lower nephron nephrosis and hemorrhagic necrosis of the liver.

This death was related to pregnancy, and it was preventable.

It was felt that this pregnancy should have been interrupted sooner. When albumin was noted for the first time, the patient was within a week of her due date, and at the time the preeclampsia was diagnosed, she was past her due date. However, if we can judge from the weight of the infant, it may be that she was not quite at term. Nevertheless, it is felt that she should have been hospitalized when she first showed albumin in the urine, and if rigorous treatment failed, the pregnancy should have been interrupted.

CASE NO. 50

This patient (age 21; para 0; eclampsia) was delivered in a bordering state, and the Reviewing Board could not obtain particulars on her prenatal

record. From the information supplied by her family, it appears that she had had severe headaches and excessive edema for about a month prior to delivery. The delivery—which was accomplished at home—was uneventful, but it occurred prematurely, and the infant weighed only 1,400 Gm.

In the first 24 hours after delivery, the patient's swelling decreased enough to permit her removing her rings. Thirty-six hours after delivery, she complained of severe headache and had a convulsion.

She was brought to the hospital two hours later in a comatose condition. Upon admission, her blood pressure was 220/130 mm. Hg., and she had pulmonary edema. Several consultants were called, and she received rigorous treatment, but did not respond and died on her seventh postpartum day. Autopsy confirmed the diagnosis of pulmonary congestion with pneumonia and focal necrosis of the liver.

This death was related to pregnancy, and it was preventable.

This death could possibly have been prevented if the patient had had prompt treatment before she got into serious trouble. She no doubt was preeclamptic for at least a month before the onset of her labor, and she should have had treatment at that time. By the time she was admitted to the hospital, she was in such serious trouble that nothing helped her.

CASE NO. 85

This patient (age 28; para 1; eclampsia) reported to her physician in the second month of her pregnancy, and saw him regularly for the next four months. At these visits her blood pressure and urine were normal, and she had a weight gain in this period of six pounds.

She did not return to the physician for the next two months, and when he next saw her, she had gained 12 more pounds, and her blood pressure had increased from 100 to 120/60 mm. Hg. She was placed on a low-sodium diet and returned in a week. At that next visit she had gained another two pounds. Her blood pressure was elevated to 130/80 mm. Hg., and she had 4+ albumin. She complained of pain and tenderness in the epigastrium.

She was admitted immediately to the hospital. By the time she was examined there, her blood pressure was 140/90 mm. Hg., and in the first half hour she passed 25 cc. of urine. At that time she began to have convulsions. She was given magnesium sulfate and 1,000 cc. of 20 per cent glucose. She went into active labor, and her membranes ruptured. Following the convulsion, her blood pressure dropped to 132/92 mm. Hg. Two hours after admission she delivered spontaneously a 1,850 Gm. live infant with local anesthesia. The placenta was expressed intact.

About a half hour after delivery, she had a third convulsion. She was given sodium luminal, magnesium sulfate and another 1,000 cc. of glucose, and a retention catheter was instituted. Four hours after delivery, her blood pressure was 138/110 mm. Hg., and she had passed 630 cc. of dark-colored urine via the catheter. Her temperature was 104° F. Six hours after delivery, she became cyanotic and expired in about 15 minutes.

This death was related to pregnancy, and it was preventable.

The patient did not have adequate prenatal care, for she hadn't returned to the doctor's office as directed.

It is unusual for a patient to have this severe toxemia without an elevation of blood pressue. The attending physician felt that her coma was so sudden and deep that she must have had an intracranial hemorrhage. He therefore certified the intracranial hemorrhage as the cause of death. It was felt that this death was more likely due to a fulminating toxemia, and it was recommended that the death certificate be amended.

CASE NO. 103

This patient (age 41; para 2; hypertensive vascular disease) had had a difficult delivery following her first pregnancy, and because of that history was delivered of her second infant by cesarean section. In her third pregnancy, she did not report for prenatal care until her sixth month, when she weighed 213 pounds and had a blood pressure of 160/90 mm. Hg. Her urine was negative. Two months later, she weighed 223 pounds, her blood pressure was 140/90 mm. Hg., and she had 2+ edema. No cardiac murmurs were heard.

She was treated conservatively at home for a week. By then she had dyspnea. She was hospitalized, and consultation was called. It was felt that the patient was in early cardiac failure. There was no improvement after 24 hours' treatment, and during that time the urinary output was 450 cc. A section was done, and a 3,500 Gm. live infant was delivered.

The postoperative course was stormy. Digitalis and salyrgen were continued, and a slow transfusion of 500 cc. of blood was given to combat anemia. The patient was dismissed from the hospital on the twentieth postoperative day in fair condition, although she still had a moderate dyspnea.

Five days later, she became nauseated and dyspneic, and was readmitted with congestive heart failure and pneumonia. She was given heroic treatment and became afebrile, but there was no resolution of the lung fields. Thoracentesis was required several times for the removal of fluid. Death occurred 53 days postpartum.

This death was related to pregnancy, and it was preventable.

The patient herself was somewhat negligent in not seeking medical care early in her pregnancy, particularly since she had a history of difficult

deliveries. At the time she was admitted to the hospital, she was in need of a complete cardiac evaluation. Treatment of the cardiac condition should have superseded delivery, and from the information available, there was nothing to indicate the need for immediate delivery.

CASE NO. 108

This patient (age 38; para 5; hypertensive vascular disease) had been known by her physician to be uncooperative. She did not report for care until the seventh month of this pregnancy. At that time, she had a blood pressure of 160/100 mm. Hg., and weighed 350 pounds. She had had a hypertensive condition for several years. The physician prescribed medications to be taken at home.

On about her due date, the patient was admitted to the hospital in active labor. The physician ordered seconal and pituitrin, minims 3, every hour, and in spite of the fact that the patient was having pains every two or three minutes, she received four doses of pituitrin. Three hours after admission, she was examined, and the record states that the presenting part was high. The membranes were artifically ruptured. A consultation was held in the evening, and the consultant advised x-ray, fluids and forceps delivery when the presenting part descended.

The patient was not seen until the next morning. During the night, she had difficulty in breathing and had persistent cough. Upon examination the following morning, she was completely dilated, and a mid-forceps delivery was done. The infant, weighing 5,000 Gm., was stillborn. The patient's condition deteriorated rapidly, and she died 12 hours after delivery. A postmortem examination revealed pulmonary edema, with cardiac hypertrophy.

This death was related to pregnancy, and it was preventable.

This patient and her family had been uncooperative and had not sought medical care until late in the pregnancy. Nevertheless, when first seen, this patient's condition indicated need for consultation from both a medical and an obstetrical viewpoint.

There were no indications for hastening labor in this patient, and the delivery should have been of secondary interest until adequate treatment for her hypertensive condition had been instituted.

CASE NO. 113

This patient's last pregnancy had occurred 14 years earlier, and she had then been told that she should have no more pregnancies. During the interval, she had been treated for secondary anemia and hypertension, and had had periods of depression. She (age 37; para 3; hypertensive vascular disease) made her first prenatal visit in her fourth month. During that length of time, her weight had increased from 149 to 152 pounds, her blood pressure ranged from 196/120 to 180/120 mm. Hg. She constantly showed albumin.

During the next weeks, she was seen every three or four days. She began to complain of headaches and blurred vision, and she developed edema. Consultation was held, and she was immediately sent to the hospital, about a month before her due date. There, she was treated with magnesium sulfate. Five days after admission, she went into labor spontaneously and had desultory and irregular pains for about 48 hours. Contractions then became regular, and dilatation progressed. By that time, her blood pressure was 298/178 mm. Hg. She delivered a stillborn fetus weighing 1,500 Gm. under nitrous oxide anesthesia. After expression of the placenta, she was given ergnovine. The placenta was dark and thrombosed.

After the delivery, her blood pressure dropped to 150/110 mm. Hg., and her condition improved. The postpartum course was stormy, and she was dismissed from the hospital. She was seen about two months later, when her blood pressure was 148/80 mm. Hg., and her urine still had a trace of albumin.

A month after this visit, all members of the family had gastrointestinal upsets, but no physician was called. The patient was affected, and while she was vomiting, she collapsed and was dead on arrival at the hospital.

This death was related to pregnancy, but it was not preventable. The patient had been advised to have no more pregnancies, but had forgotten that advice, apparently because she had enjoyed 14 years of moderately good health in the meantime. Had she not become pregnant, her life span might have been extended for a few years.

The Reviewing Board wondered whether or not the physician considered or discussed with the patient the possibility of interrupting this pregnancy when she was first seen.

CASE NO. 72

The previous pregnancy of this patient (age 34; para 1; hypertensive vascular disease) had been stormy and had resulted in the delivery of a stillborn infant. She reported for prenatal care at the end of the third month of pregnancy, at which time she weighed 150 pounds. Her blood pressure was 200/100 mm. Hg., and she had 3+ albumin. She had some edema and complained of constant headaches. She was seen in the physician's office once a month for the next three months, and twice during the next month. During that period, her weight increased to 178 pounds, her blood pressure remained between 190/100 and 200/100 mm. Hg. She refused to follow diet advice or to take medications and to rest.

The physician called consultation, and it was decided that the patient should be delivered by cesarean section because of her general condition and the history of her past pregnancy. Cesarean section was done about 12 days before the estimated date of her confinement, under ether anes-

thesia. At that time, her appendix and a cystic ovary were removed.

The patient's immediate postoperative condition was good. No information was available as to her postoperative course, but she died on the seventh day.

This death was related to pregnancy, and it was preventable.

This patient had a severe hypertensive disease and was apparently uncooperative with her physician. It is felt that a local anesthesia would have been preferable to ether in a patient in such a precarious situation, and that no incidental surgery should have been done.

The question arose as to whether this patient's pregnancy should not have been interrupted.

SURGEONS' SECTIONAL MEETING IN ST. PAUL

Surgeons and related medical personnel are invited to attend a three-day sectional meeting of the American College of Surgeons at the Lowry and St. Paul Hotels in St. Paul, Minnesota, April 8-10.

Among the many current problems to be covered are hazards of blood transfusions, peripheral vascular surgery, injuries of the diaphragm, whiplash injuries, prophylaxis of injuries in children, priorities for surgical treatment in mass disasters, multiple injuries, gastrostomy, ileostomy, colostomy, surgery for gastric malignancy, hormone therapy in advanced breast cancer and precautions in colon surgery. A one-day program in ophthalmology will be a special feature of the session, and will include discussions on choice of anesthesia in cataract operations, radioactive isotopes in the diagnosis of interocular malignancies, goniotomy and industrial ophthalmology. In addition, motion pictures will be shown each day.

The Iowa physicians who are to participate in the program are Dr. C. B. Larson, head of orthopedic surgery, and Dr. W. C. Keettel, of the Department of Obstetrics and Gynecology, at SUI.

CLINICAL HYPOXIA

On the first Friday and Saturday of each month, the National Resuscitation Society, Inc. presents a course in clinical hypoxia, featuring laryngoscopy and intubation, at the New York Academy of Sciences, 2 East 63rd Street, New York City. The Society will present its course elsewhere in the country on request. A minimum of 20 students is required to justify traveling expenses.

The course is open to physicians and dentists. Many obstetricians and general practitioners are numbered among the 1,000 people who have attended the course so far. Instruction brings to a focus, in one intensive period, both didactic and clinical material (lectures, demonstrations, dog work, operating room demonstrations and cadaver practice). The matriculation fee is $50.

IOWA METHODIST HOSPITAL SYMPOSIUM IN INTERNAL MEDICINE

The fourth annual medical symposium sponsored by the internal medicine staff of Iowa Methodist Hospital is to be held at the Des Moines Art Center, Grand Avenue at Polk Boulevard, Des Moines, on Saturday, May 11. All interested physicians will be welcomed.

9:00 a.m. "The Diagnosis and Management of Bronchial Asthma"
Paul M. Seebohm, M.D.
Associate Professor of Medicine
University of Iowa Medical College
Director, Allergy Clinic and Pulmonary Function Labtoratory

10:30 a.m. "Present Problems Related to the Use of Antibiotics"
Wesley W. Spink, M.D.
Professor of Medicine
University of Minnesota Medical School

1:30 p.m. "Present Concepts of the Hormone Therapy of Cancer—Surgical and Non-Surgical"
Samuel G. Taylor, III, M.D.
Associate Clinical Professor of Medicine
University of Illinois Medical School

3:00 p.m. Report—Raymond Blank Guild Heart Station

3:30 p.m. "Problems in the Drug Therapy of Hypertension"
J. Earle Estes, M.D.
Consultant, Section on Internal Medicine
Mayo Clinic

Standards for Mental Health Clinics

(Continued from page 218)

in cases where only appraisal of intellectual capacity is requested by the medical director. (c) He conducts counseling interviews with patient and relatives at the discretion and under the supervision of the psychiatrist. (d) He maintains records of cases handled. (e) Under the direction of the psychiatrist/director, the clinical psychologist having training qualifications will be responsible for the supervision of the students in training from graduate schools of clinical psychology and other staff psychologists working in the facility.

4. *Secretary-Receptionist:* (a) She maintains all administrative records necessary for the proper operation of the clinic under the direction of the psychiatrist. (b) She serves as receptionist for all office callers. (c) She takes dictation and types records, reports and correspondence. (d) She has bookkeeping responsibilities, prepares financial reports, collects fees, etc.

Woman's Auxiliary News

OUR PRESIDENT SAYS—

The March issue of the WOMAN'S AUXILIARY NEWS contained the complete program for our Annual Meeting, and you have seen for yourself that all of the events have been planned for YOU—for fun, for information, and to assist you in making new friendships and renewing old ones.

It is our golden opportunity to join together in a common bond as doctors' wives, to show pride in our husbands' work, to endorse their way of life and to give them all the help we can.

I hope you all have an interest in at least one of the many activities that your Auxiliary promotes, and that you will join our "Information Please" sessions on Monday morning. If you are a member-at-large, or if you live in an isolated area and are a member of a small group that cannot be too active, come to see how we operate, and let us get to know you!

LOOKING BACK

As I remember the miles I have driven and flown, the meetings I have attended, and the hundreds of letters I have received and answered, it seems that this has been a long, long year. But when I think of all the personal calls that I intended making but never did, during this year of my presidency, and when I remember all of the other things I might have done, it seems to have been all too short.

It has been an honor and a privilege to serve and represent you this year, and I thank you for your loyalty and confidence, and for your many thoughtful kindnesses. I hope I have carried out your desires and promoted your ideas. I know that I have received much more from you than I have given in return. I have been well rewarded for my long hours of travel and even longer hours at the typewriter.

I have been most appreciative of the invitations that the various committees of the State Medical Society have extended me. It has been an inspiration to see your husbands willingly take time out from their busy practices and drive many miles in order to work together at finding solutions to the many problems that are involved in providing Iowa the best in health services. And I am proud of you wives who have gladly accepted every opportunity to aid your husbands, thereby lightening their burdens of public service. We are well aware that without the help and guidance of the staff of our State Society and the endless hours of work that our administrative secretary, Mrs. Lammey, has devoted to our activities, we would have accomplished far less than we have.

REPORTS! REPORTS! REPORTS!

Hats off to Mrs. Elmer Larsen, of Appanoose County! Hers, the first such report, reached me on February 5.

Mahaska and Clay Counties were first to report 100 per cent subscriptions to the BULLETIN.

So far, I have received 18 reports from county presidents, out of a possible 43; one member-at-large report; and one councilor report. Reading them has given me particular pleasure. In your reports, many of you have said your local Auxiliary has a very small membership and that your area is over-organized, but then you have gone on to list the most imposing group of activities that anyone can imagine, and then you tell me of individual members who are active in them. *Our biggest goal, you have accomplished!* You and your fellow members have been active in promoting community health as doctors' wives!

EVERY DOCTOR'S WIFE A MEMBER!—That is our primary objective.

I wish it were possible for me to greet every one of you at our Annual Meeting, to call you by name and know that you are a member of the Auxiliary. Won't you please make an effort during our meetings to come up and speak to me? And more than that, bring at least one other doctor's wife with you! It will make me happy and proud to be able to say "I touched shoulders with you."

Your state officers and the members of the Polk County Auxiliary have worked hard and long to bring you the best Annual Meeting ever. Please show your appreciation to them and your confidence in the Auxiliary by attending all the sessions you possibly can.

Surely we can all resolve to make for ourselves and others a better life by attempting to capitalize upon our handicaps, trying to improve our dispositions, trying to rid ourselves of our prejudices, trying to correct our faults and looking for chances to smile even when the going is rough.

By this time next year, let's be able to look back and say "Yes, 1957-1958 was a happy and productive year."

JANE KING
President

1956-1957 PRESIDENT



Mrs. Dean H. King

Congratulations to our president for a most successful year as our leader! We should like her to know that we've enjoyed every minute of our work with her. She is such a delightful and energetic person, and she has set an excellent example for all of her committee workers.

TODAY'S HEALTH EXCLUSIVE CLUB, 1957

Through February

Group 1	Allamakee County, Mrs. Therese Meyers, Chairman	187%
	Dallas - Guthrie Counties, Mrs. R. J. Peterson, Chairman ...	143%
	Wright County, Mrs. R. G. Bird, Chairman	114%
	Grundy County, Mrs. L. E. Frink, Chairman	100%
Group II	Dubuque County, Mrs. G. F. Keohen, Chairman	106%

IN MEMORIAM

The members of the Woman's Auxiliary to the Iowa State Medical Society deeply regret the passing of Dr. Rex Smith, of Waterloo.

IOWA SAFETY COUNCIL

The Iowa Safety Council hopes to stimulate individual interest at the community and neighborhood levels in an across-the-board group of safety projects.

At its meeting on March 5, Mr. Russell Brown, the safety education director, reported on a survey made in seven areas and covering such aspects of the safety problem as traffic engineering, law enforcement, accident facts, proper licensure, traffic court procedures, school safety and safety education. Each of them is important, but to achieve any real success in reducing traffic accidents, he said, we must have balanced support for the entire program. A number of workshops have been conducted throughout Iowa, and safety programs are being set up to meet the needs of the various sizes of cities and communities.

The Iowa Safety Council hopes that any organization interested in a program will join, will support sound official proposals and will offer constructive suggestions to the individuals in charge. The Council plans to study changes in laws affecting safety and will appeal for public support of the proposals that careful analysis has indicated will bring about life-saving improvements. Furthermore, it will do what it can to encourage strict and impartial enforcement of all laws and regulations affecting safety.

Members of the Woman's Auxiliary to the Iowa State Medical Society are urged to join the Iowa Safety Council and to support its objectives.

Frances Hines
Safety Chairman

SAFETY FIRST! Heed—not speed.

MEETING IN IOWA CITY

On Wednesday evening, January 30, Mrs. Dean King, president; Mrs. Fred Gerken, president-elect; Mrs. Herbert Merillat, organization chairman, and Mrs. Hazel Lammey, administrative secretary, of the State Auxiliary, met with representatives of the wives' auxiliaries to the medical fraternities at the home of Mrs. Roger Westerlund, in Iowa City.

The purpose of the meeting was to acquaint those groups with the activities of the State Auxiliary, and to suggest that they affiliate with it by forming a Students' Wives' Auxiliary.

The representatives of the State Auxiliary were pleased about having an opportunity to make friends with some of the students' wives, and they extend their thanks to Mrs. Westerlund for making such an enjoyable evening possible.

Mrs. Herbert C. Merillat
Organization Chairman

COUNTY AUXILIARIES

Boone

The Auxiliary to the Boone County Medical Society met for luncheon on Tuesday, January 15, 1957, at the Lincoln Restaurant. Twelve members were present. Mr. D. D. Wightman, administrator of the Boone County Hospital, gave a very informative and interesting talk on the functions of a modern hospital, on the organization and function of the Boone County Hospital and on plans for improvements there.

A gift subscription to TODAY'S HEALTH is being sent to the library at the Boone Junior High School.

Polk

The Auxiliary to the Polk County Medical Society sponsored a benefit card party on Monday, February 11, at Hoyt Sherman Place, in Des Moines. The proceeds were contributed to the Future Nurses Clubs and the Nurses Loan Fund.

At the meeting held in the Garden Room of the Kirkwood Hotel on March 8, Mrs. Dwight Wirtz presided, and the program was entitled "Know More About Mental Health." There was an election of officers.

Wapello

The Auxiliary to the Wapello County Medical Society met for a noon luncheon at the Ottumwa Country Club on March 5. The president, Mrs. D. O. Bovenmyer, presided. Miss Anna B. White, county health nurse and the Auxiliary's candidate for the presidential award for community service, was guest of honor. She was given a corsage.

The Auxiliary will sponsor a Career Day Tea, as usual, in May. The group voted to contribute $50 to AMEF, and $5 to the memorial fund in memory of Dr. Barton.

A graduate nurse who has repaid the Auxiliary in full for the loan that helped finance her training expressed great appreciation to the group. A revolving fund has been created to further the education of other girls who are in need of assistance.

The following officers were elected and will assume office after the Annual Meeting: Mrs. Frank Morgan, president-elect; Mrs. Robert Myers, vice-president; Mrs. W. W. Ireland, secretary; and Mrs. Robert Hughes, treasurer. Mrs. Edward Ebinger will then become president.

Webster

The Auxiliary to the Webster County Medical Society met at the home of the president, Mrs. L. J. O'Brien, on February 19. Mrs. Roger Drown and Mrs. Robert Lee assisted. Chairmen for the following committees were appointed: Hobby Craft Show, TODAY'S HEALTH, Crippled Children's Clinic, Future Nurses Club, and Hospitality.

Wright

The Woman's Auxiliary to the Wright County Medical Society held its February meeting at the home of Mrs. Richard Young, in Clarion. Reports were given by the chairmen of standing committees. One of the active members of the Auxiliary, Mrs. R. G. Bird, of Clarion, has recently moved to California.

THE CHATTER BOX

The **Frank Larsens** of Fort Dodge are spending some time in Mexico City, and from there they will journey to Acapulco for a short stay. The Larsens are planning to fly to Los Angeles from Mexico, to spend a few days with Mrs. Larsen's parents, **Dr. and Mrs. R. M. Spencer.**

Just returned from a jaunt to Mexico are the **Otto Glesnes** of Fort Dodge. We hear they enjoyed ideal weather, with temperatures in the 70's and 80's.

The **Al Smiths** of Des Moines are the happy parents of a brand new baby girl.

The **Ralph Russells** of Waterloo are vacationing in sunny Florida.

The **Floyd Springers** of Des Moines are visiting in Tucson, Arizona. We hear Floyd is getting his golf in fine shape, and that Ailene undoubtedly will come home with a lovely tan.

WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

President—Mrs. Dean H. King, 301 E. 4th Street, Spencer
President-Elect—Mrs. J. F. Gerken, Waterloo
Secretary—Mrs. Robert P. Mason, 5818 Chamberlain Drive, Des Moines 12
Treasurer—Mrs. E. A. Vorisek, 6205 Woodland Rd., Des Moines 12
Editor of THE NEWS—Mrs. E. T. Burke, 601 S.W. 42nd Street, Des Moines 12
Asst. Editor of THE NEWS—Mrs. D. F. Crowley, Jr., 663 44th Street, Des Moines 12

President's Address

WENDELL L. DOWNING, M.D.

LE MARS

On behalf of your officers, may I welcome you to this, the 107th Annual Meeting of the Iowa State Medical Society. An excellent program has been arranged for you by the section chairmen, and our thanks go to them for their fine work. I should also like to urge you to visit the exhibits at every opportunity. The support of the exhibitors makes this meeting possible.

Each year shows an increase in the activities of the Iowa State Medical Society. Many problems have been solved during the past year, but new ones have presented themselves. The many meetings that were held throughout the state and the other work necessitated by the physician-hospital controversy made the first half of the year a busy one, and the legislative activities and the Blue Shield program have made the last half interesting for the officers and committees. The 22 members of the Executive Council have worked diligently during the past 12 months, and the Society owes them a debt of gratitude. The members of the office staff have continued to prove themselves capable and devoted, and they also merit our thanks.

COMMITTEE WORK

Our committees, as you know, carry on a major part of the work of the ISMS. In all, we have 10 standing committees, with 16 subcommittees, and 14 special committees. The total committee membership approximates 214. These committee members, who come from all parts of the state, not only attend meetings but also spend many hours of serious study in resolving the problems assigned to them. No longer are committee reports merely filed. Now, the recommendations contained in them are promptly activated. It is not possible for me to discuss the work of all of the committees, and I must ask you to read the HANDBOOK OF THE HOUSE OF DELEGATES so that you may see how much constructive work they have carried out. Let me review briefly for you the work of some of the committees in order to present an overall picture of the work of the Society.

Mental Health. An excellent mental health program has been outlined for Iowa by the Governor's Advisory Committee on Mental Health, and the impetus for this program came from our Society's Subcommittee on Mental Health. I urge that you study this long-range program and assist in its implementation.

Medical Service. The Medicare program has been activated by the Committee on Medical Service, under the chairmanship of Dr. Edwards. The Society elected to be both contracting and fiscal agent, and Mr. Wilbur Quinn has the responsibility of directing it. In activating this program we are carrying out a federal law, and whether or not we agree with its philosophy, we must see that it is a success. In activating this new program, the Society had to submit a fee schedule, and a special Fee Committee, with Dr. Eller as chairman, worked out a relative value schedule that was accepted by the Defense Department. At the request of the Executive Council, the Fee Committee has continued its work, and has developed a so-called Iowa Relative Value Schedule. This formulation has been studied by the Executive Council, and it will be presented to the House of Delegates for consideration. Bear in mind that this is a *relative value* schedule, and that no monetary equivalents have been set.

I should also like to point out that this schedule is in no sense a state fee schedule for private practice. By formulating a relative value schedule, we shall have available something concrete which could be adopted by groups such as Blue Shield, commercial insurance companies and the State Department of Public Welfare, which—if the Legislature approves—will activate the new federal public assistance program on July 1, 1957. This schedule proposes to correct inequities in former schedules, such as the one used by Iowa Medical Service. No fee schedule is perfect, but with your help, the Committee can eventually formulate one which should be acceptable to the membership of this Society.

Grievance Committee. As in previous years, this Committee has performed yeoman service for the people of Iowa as well as for the profession. It is the one committee which of necessity works so quietly that we seldom realize its contribution to Medicine.

Rural Health. The important Subcommittee on Rural Health has again had a busy year under the chairmanship of Dr. Leinbach. Working with the SUI College of Medicine, it has carried out a number of important projects. The preceptor program continues to be a notable success. Much credit is due the doctors of Iowa who participate in this program. The Subcommittee has a rural health contact man in each county, and it has established close liaison between the ISMS and the Farm Bureau, the Extension Service and the State Department of Health. The first Rural Health Conference was held at Iowa State College in March.

Health Education. A fine program of health edu-

cation is being carried on by means of radio, television and the press. Just how far this health education and public relations T-V project should go is a question that needs reevaluation. Can we continue as a society to finance this ambitious program, or could we better unite with other health groups to broaden its scope and lessen the financial burden?

Blue Shield Liaison Committee. The Blue Shield Liaison Committee, which was new last year, has helped the Society in working out a system for close cooperation with the Blue Shield Board of Directors, as recommended by the House of Delegates. Iowa Medical Service is of necessity a business organization, and there is no desire on the part of the ISMS to interfere with its proper function. Close liaison on policy is recognized as invaluable by both groups. At the request of the House of Delegates last year, the Blue Shield Board of Directors has developed a number of new policies for your consideration. As a society, we are grateful to our members on the Blue Shield Board. They have worked hard and have developed a comprehensive program which is to be submitted to the participating physicians at their annual meeting.

Legislative Committee. This year, a legislative one at the state level, the Committee on Legislation has many responsibilities. Many bills have had to be studied, and active participation in legislation has been carried out. The county legislative contact men have proved to be a potent force, as evidenced by their performance in the last election and during the current session of the Legislature. The Iowa contact-man plan has been adopted recently by the AMA Committee on Legislation for use at the national level.

Many matters of vital concern to the medical profession are being considered by Congress. At no time in history have we had as health-minded a Congress and Administration as at present. As individuals and as a state society, we must maintain our interest in health legislation and provide guidance to our lawmakers in these matters. A new national health insurance plan was submitted to the 85th Congress by Senator Murray and Rep. Dingell. Since the introduction of the original Murray-Dingell Bill several years ago, piecemeal enactment of many of its components has occurred. The AFL-CIO has recently shown interest in the passage of legislation to provide hospitalization and surgical benefits for those who receive federal retirement payments and their survivors. I suggest that you devote time in your county society meetings to a consideration of the many health bills which are before Congress, and that you then notify your congressmen as to the action which you feel should be taken on them.

We now have a voluntary organization seeking funds for research in almost every one of the major chronic diseases. As long as those foundations use the money donated by the public for education and research, their objectives merit our support. I personally question the advisability of their using those funds for mass immunizations and the like.

The Jenkins-Keogh Bill has been chosen by the American Bar Association as one of its main projects. This bill merits your wholehearted support.

Several other committees of the State Society have had a busy year, and they have developed and carried out many worthwhile projects for the betterment of the health of the people of Iowa. Among these are the committees or subcommittees on industrial health, chiropractic, polio, national emergency medical service, medical care to the indigent public health and prepayment medical care.

OTHER ISMS ACTIVITIES

THE JOURNAL OF THE IOWA STATE MEDICAL SOCIETY, under the able guidance of Dr. George and Mr. Hamilton, has become one of the leading state medical journals. The last year has shown increased advertising income, good scientific articles and excellent miscellaneous material. We have every reason to feel proud of our state journal.

Our AMA delegates have taken an increasingly important part in AMA activities. Iowa influence has been felt at the national level, thanks to our capable delegates and alternates.

Highway Accidents. The most serious health problem in Iowa, as has been emphasized by former presidents, is still as important and even more urgent than ever before. Highway accidents are taking a tragic toll of dead and injured, and we seem unable to stop the slaughter. Perhaps we need a Highway Accident Subcommittee, as our Committee on Public Health has suggested, to serve with other accident-prevention groups in the state.

Woman's Auxiliary. Under the leadership of Mrs. Dean King, president, and its other officers, the Woman's Auxiliary has carried out a splendid program of activities during the past year. Among the subjects in which the members have interested themselves are legislation, public relations, nurse recruitment and scholarships, and TODAY'S HEALTH promotion. In behalf of the Society, may I express our deep gratitude for the fine work which they have carried on.

Physician-Hospital Controversy. At long last, the perennial physician-hospital problem has been settled, and we feel that the Joint Declaration is a fair and practical solution. The passage by the 1957 Legislature of a Joint Bill embodying the points that were agreed upon should assure doctors and hospitals of a long period of harmonious relations, all for the good of the public. We realize that far too much time and money have been expended on this perplexing problem, but we had no choice but to see it through. Credit for resolving this contro-

versy belongs to many former as well as to the present officers and members of the Society. Their number is too long to permit my listing them, but I am sure you know who they are.

Society Policy. A careful study of JOURNAL articles, newsletters and, more recently, the HANDBOOK OF THE HOUSE OF DELEGATES has provided you with information concerning the policies and activities of your Society during the past year, as well as information on the unsolved problems awaiting solution. A few uninformed members, as well as a few who are probably more far-seeing, have not approved of some of the activities and the manner in which Society funds have been expended. Your officers have made a sincere effort to carry out your wishes and to provide wise leadership. All policies established since the last meeting of the House of Delegates have been made by our Executive Council, our only other policy-making group. May I urge that you study the official actions. If you desire that a different program be carried out, it is up to you, through your representative in the House of Delegates, to so advise.

The new proposed policies of Blue Shield, developed at the request of the House of Delegates, have come in for considerable support as well as much criticism. A sincere effort has been made by the Blue Shield Board to formulate a program which meets with your wishes. It is up to you to tell that Board what you wish done. May I remind you, however, that only a united membership can make this important activity a successful one.

I have had eight interesting and stimulating years of active participation in the affairs of this Society, and the time will soon arrive for me to retire from active duty. These eight years have been most rewarding. May I express my sincere thanks for your loyal support. May I also ask for your continued support of the new officers and committee members.

The Future of the State of Iowa

The conversation took place in a restaurant dining room in New York City. My host, an executive of an eastern company, had just reported that his firm soon would open a major branch in a midwestern state adjoining Iowa.

"In picking your branch site, did you consider Iowa," I asked.

"Well, not seriously," he said. "There doesn't seem to be much future in Iowa." A wonderful state, he said, but it wasn't *moving* very fast; gave no evidence of moving any faster. It was exporting too many people, according to the figures. Taxes were high there, and in a rising economy they would have to go higher still. How would a virtually stable population manage them? If they couldn't or wouldn't, what would happen to Iowa as one state among the 48?

Since that conversation, I have searched for a fuller understanding of this state where I have lived, and of its people, whom I have known all of my life.

The New York executive, whose company might have located here, saw less future in Iowa than he saw in other neighboring states. His reasons, even that of population growth itself, were unrelated to the *location* of Iowa (which is excellent), or to its *physical resources* (which in this case were adequate and which can grow), or to its *climate* (which at worst is better than many adjacent states). His reasons involved the intangibles which spring from human conviction and action. If his words were an indictment for shortcomings, they were an indictment not of our area, but of its people.

The greatest source of strength to the people of Iowa in the last century, transmitted generation by generation down to us, may now be our greatest source of weakness. *It is a supreme and personal sense of independence.* You cannot live close to the soil, you cannot watch the sprouting of seeds, the falling of rain, the approach of harvest —year after year—without deep and lasting effect upon your soul. This helped produce in the Iowan a distinctive concept of freedom. In substance, it was a kind of independence to which *even too much inter-dependence* might look like a kind of slavery.

A RESISTANCE TO CHANGE

An observer might see modern manifestations of the Iowan's historic independence in many ways. He might see a current counterpart of it in the neat, well-kept farmhouse and barns of one farm, adjacent to the ramshackle, untended layout of an adjoining property. Equal in size and fertility, the two farms are manifestly unequal in the obvious attitudes of their owners toward "appearances." Nor is this true only of farms. It is true of *whole* towns, ten miles apart on the same highway. I may love my neighbor, but I am not his keeper. Could this reflect the tolerance of a pervasive self-satisfaction, in individuals and in their groups? Such tolerance permits of double standards, or no standards at all.

The Iowan long ago ceased to be the sole architect of his own destiny, but the fact has not been an easy one to face. For it poses problems whose solutions require alteration in the Iowan's traditional concepts of independence—in himself and in his government. Subconsciously he resists, not

change itself, but the altered way of life which change inevitably brings.

In the 1950's, the Iowan not only tills his productive acres. He works in an office, a factory, a laboratory. He produces not only more eggs, hogs, timothy seed, popcorn, chickens, corn and oats than any other state in the Union; he also runs the largest cereal plant, the greatest washing machine industry, the biggest fountain pen, Cellophane, two- and four-cycle gasoline engine manufacturing plants and the largest aluminum rolling mill in the world. What he makes with his hands already has become as important as what he grows in his soil. He lives almost equally on the farm and in town. He is a brand new citizen, potentially of great stature. Yet he still thinks too much of himself as the man he *used* to be; and armed with the archaic government of his age of isolation, he wills the management of his society too much accordingly.

His whole character has altered, he is a new kind of man, yet he clings to the robes of his past —the self-satisfaction, the extra depth of personal independence which were his native inheritance.

He seems a little incredulous at the fundamental fact that now, as in 1865, wherever he lives and whatever he does to live, he is still an Iowan, and that the new patterns of his life are valid Iowa patterns for his day.

In the virility of his youth, he proclaimed for the world the motto of his state: "Our liberties we prize and our rights we will maintain." But now when the issue is joined of reapportioning his own assembly to reflect the realities of his present existence, he finds himself saying: "We in the small counties hold the advantage. Let us cherish it." The Iowan has changed. He is a new man in a new age. But he does not recognize himself. The enchantment of his own past has dimmed his vision.

The greatest misfortune of the Iowan's life is his present conflict over what many presume are rural versus urban "interests." There is indeed a conflict in Iowa. But it is not between the city and the country, and it is dangerous to assume that it is. It is a conflict between the historic philosophy of life in Iowa, and a more modern philosophy, born of the changing times. Many a farmer embraces the new philosophy, many a city dweller the old, and it may be that the greatest resistance to the new philosophy is *neither* in the city nor the country, but in the small town.

A hundred years ago, even 25 years ago, it did not matter much what other states might be doing. Today it matters. In an age of competition, we must either compete or we shall drop quickly into the second ranks. This is equally true of all facets of our Commonwealth activity—business, industry, education, agriculture, anything. In competition, somebody must lose. "It's either them, or us."

The point is that the future of Iowa is forever subject to the positive and aggressive *action* of the Iowan. No development commission or board can improve the Iowan's future substantially. It is only the Iowan, in a modern partnership of conviction, who can do that—with the help of modern methods and a modern faith.

A PLAN

The Iowan must have a program—a plan for the future of the state. Such a program is so important that it merits the labors of the best minds in Iowa, working with every available resource which can be put at their disposal.

Part I is concerned with altering the *philosophy* of the Iowan, systematically changing an essentially defeatist attitude in our make-up, overcoming our inherent fears of change, replacing our historic contentment with a healthy discontent. For we have been a complacent people, and we must somehow develop a genuine excitement for the fabric of the years to come—*in Iowa.*

Part II of the program is concerned with making the most of what we have *now.* This involves the reorganization of the governmental structure in Iowa, the perfection of sound tax structures—the development of a modern and efficient state.

Part III of the program is concerned with the systematic development of the Iowa economy—the Iowa income potential. It naturally emphasizes the future of our agricultural base. But it is aimed also at the exploitation of every possible advantage Iowa may have or might conceivably develop in active competition with other states for the gross national product.

We are no longer isolated from the rest of the nation, in either time or distance. Iowa's geographical location, *once* isolated, now makes her the more attractive as a locale—for businesses, for industries, for *living.* What better place in the nation than the rolling lands of Iowa? What finer people than ours? Iowa can *never* become so extensively populated, so industrialized, so congested that its rural beauties, its rich human friendliness, *its people,* ever will cease to be her own incomparable assets. Are these salable? The Iowan does not know what a solid citizen he is. In competition, he does not know his own strength. If he will regain his pride and confidence, if he will adopt today's methods and embrace a modern faith, he can make this land look like Heaven to the people of half the nation.

A fabulous future awaits those who *plan* for it. Problems? Tremendous ones. Risks? Constant risks, of every kind. But never was the potential so great, so challenging, so inspiring—for the nation or for this Commonwealth.

—Loren Hickerson, executive secretary of the SUI Alumni Association. Digested from the October, 1956, issue of THE IOWA ALUMNI REVIEW.

Scientific Articles

The Role of Antibiotics in Pseudomembranous Enterocolitis

GEORGE M. OWEN, M.D.

IOWA CITY

THE PROBLEM PRESENTED by pesudomembranous enterocolitis and staphylococcal enteritis has been widely discussed in the literature during the past 10 years. The revival of interest in these conditions stems from the major changes in therapy that have been brought about by the introduction of antibiotics. Concomitantly, new adverse reactions came to be recognized, and the mounting frequency of these disorders is a reflection of widespread employment of the new agents.

The diagnosis of pseudomembranous enterocolitis has nearly always been delayed, pending the revelations of postmortem examination. But this paper describes a case in which the diagnosis was made during life. Subsequently, the patient improved as a result of simple supportive therapy and the withholding of antibiotics. It seems desirable to call this condition to the attention of practicing physicians, in order that their suspicions may be awakened. If they can come to recognize this disorder during life, the outlook for some of their patients may be considerably improved.

I shall undertake a brief review of the literature and a summary of the clinical and pathologic manifestations. In addition, because patients have frequently developed membranous enterocolitis following repeated employment of antibiotics for relatively trivial infections or for purposes of prophylaxis prior to surgery a warning is added regarding some of the potential hazards of antibiotic therapy.

CASE REPORT

The case upon which this paper is based was of a child who had been subject to recurrent minor infections for which antibiotics were often prescribed, and who subsequently developed a chronic diarrheal disorder associated with fever and abdominal pain.

The patient (UH 56-1167), a 47-month-old boy, was admitted to the hospital on January 24, 1956, and discharged on February 1, 1956. His complaints on admission were diarrhea, abdominal pain and fever. Two months before admission, he had had a mild fever and cough for which tetracycline was prescribed. One week later, he had developed a rather severe gastroenteritis associated with anorexia, nausea and a more or less constant periumbilical pain, not thought to be cramping in nature.

He complained of abdominal discomfort most frequently when he felt the urge to defecate, and doing so provided him some relief. Each day he passed from six to eight foul-smelling, semi-liquid stools containing large amounts of mucus and, infrequently, small amounts of blood. His rare spells of vomiting were unrelated to the abdominal pain, and accordingly, they provided him no relief.

When these symptoms had persisted for approximately two weeks, he was hospitalized elsewhere for one week and was treated with chloramphenicol. But the difficulty continued, and he was referred to University Hospitals.

Past History. The boy's mother had had a normal pregnancy, except for some bleeding during her third trimester, for which hospitalization was unnecessary. Her labor and delivery had been normal, and though the cord was tightly wound about the infant's neck, he had responded immediately, without assistance. Both mother and child had done well, and they had left the hospital within a week. The infant had been started on formula, and during the early weeks his stools had

Dr. Owen is a resident in Pediatrics at University Hospitals, and his paper won first prize in the 1956 essay contest conducted by the Iowa Pediatric Society. He wishes to thank Drs. D. L. Long, J. E. Houlahan and B. R. Weston, of Mason City, and C. D. May, of Iowa City, for permission to include the case report that is a part of it and to acknowledge the advice and helpful suggestions offered by Dr. May in the preparation of the manuscript.

been thought somewhat loose. Frequent changes in formula had brought only temporary improvement, but nevertheless, his early growth and development had been normal, solids had been introduced at six weeks, and the usual immunizations and vaccinations had been given him before his first birthday. His parents and an eight-year-old sibling had always enjoyed good health.

The following is a tabulation of his medical history.

Age in Months	*Manifestations*	*Treatment*
13	measles, mumps	antibiotics
17	cervical adenitis, URI	antibiotics
23	cervical adenitis, URI	sulfonamides
24	otitis media, URI, fever	penicillin, tetracycline
27	hemoglobin 10.2 Gm.	iron
29	abdominal pain, watery diarrhea, fever	
	preoperative diagnosis: appendicitis or bowel obstruction	abdominal laporotomy
	postoperative diagnosis: pneumococcal peritonitis	antibiotics
	postoperative course: hyperpyrexia, circulatory collapse, left foot drop	two weeks' hospitalization antibiotics
30	poliomyelitis, tonsillitis	one week's hospitalization penicillin, sulfonamides
32	diarrhea, cervical adenitis	creomycin
33	fever	tetracycline
34	anemia, ESR 72 mm./hr.	iron
35	tonsillitis	ten days' hospitalization antibiotics
36	tonsillectomy	antibiotics
	diarrhea (onset nine days postop., persisted two weeks)	streptomycin, creomycin
37	acute gastroenteritis	diet
38	cervical adenitis, fever	penicillin
39	diarrhea, fever	ten days' hospitalization
45	fever, cough	antibiotics, gamma globulin
46	gastroenteritis (PI)	tetracycline

Physical Examination. The patient was a shy, reserved, chronically-ill-appearing youngster clinging to his parents. His temperature was 100°F. He was pale, but well hydrated, alert and cooperative. There were peculiar atrophic changes in the subcutaneous tissue of his forearms and legs, which the parents said had been present since his birth. The abdomen was flat and soft, and had a well-healed incision in the right lower quadrant. The liver edge was felt 2 cm. below the right costal margin, and was smooth, firm and non-tender. There was some tenderness in both lower quadrants, but no masses could be felt, and the bowel sounds were normal. The deep-tendon reflexes were absent in the left leg. The patient was below the sixteenth percentile for both height and weight. The rest of the examination was essentially normal.

Laboratory Studies. The red blood cell count was 3.66 million per cubic millimeter; the hemoglobin was 11.2 Gm.; and the white blood cell count was 8,200 per cubic millimeter. The differential count showed 52 per cent polymorphonuclear leukocytes, 37 per cent lymphocytes, 7 per cent monocytes, and 4 per cent eosinophils. The erythrocyte sedimentation rate was 62 mm. per hour. The serum proteins totalled 5.6 Gm., the albumin was 3.8 Gm., and the globulin 1.8 Gm./100 ml. Gamma globulins measured 381 mg./100 ml. by electrophoretic analysis. The urine was normal.

The feces were brown and semi-liquid, with large amounts of mucus and pus, but no blood, ova or parasites. Cultures grew Salmonella Group C and Candida albicans, but no other Salmonellae and no Shigellae or Staphylococci.

Other Examinations. The proctosigmoidoscope was passed to about 8 cm. The rectal mucosa was somewhat edematous and hyperemic, and it bled on slight trauma. No ulcers were visible, but a moderate amount of mucosa had prolapsed at the rectosigmoid junction and had obliterated the lu-



Figure 1A



Figure 1B

men of the bowel. This apparent prolapse was easily reduced by means of air insufflation.

Following barium enema (Figure 1 A and 1 B), the haustrations were distorted, and barium was seen to be dissecting under large flecks of membrane-like material in the proximal and transverse colon. A diagnosis of membranous colitis was made.

With both first and second strengths of PPD, tuberculin tests were negative.

Hospital Course. The child had a low-grade fever during the first four of his nine days in the hospital, and he passed four to six foul, semi-liquid stools daily until he had been prepared for roentgenologic studies and sigmoidoscopy. Following those studies, he had one or two soft but formed, brown stools, containing much less mucus and having a much less foul odor. His appetite improved markedly, and he adjusted gradually to the hospital situation, so that before his discharge, he was playing and otherwise acting like a relatively normal child.

RECOMMENDATIONS

He was given a diet high in protein but low in foods containing wheat and starch. One or two hours of rest each day were insisted upon. All antibiotics were to be avoided unless absolutely necessary, and on the rare occasions when they were thought essential, they were to be administered parenterally.

Interval Note. Three or four days after his discharge, the patient developed a non-productive croupy cough, which persisted for two or three days and then cleared spontaneously. About three weeks later, he had a similar difficulty that persisted just as long. He had neither fever nor other symptoms, and no medicines were prescribed, not even asprin. His appetite was described as ravenous, and he gained four pounds during the month after his discharge. His stools were nearly normal, though occasionally they were somewhat mushy. During the first week after his discharge, his bowels moved two or three times each day, but thereafter only once or twice a day. On rare occasions, he complained of mild abdominal discomfort, but it was relieved by defecation. There was essentially no change in the physical examination. He appeared considerably less reserved in manner.

Laboratory Studies. The blood contained 11.7 Gm. hemoglobin; there were 9,300 white blood cells per cubic millimeter; and the differential count showed 52 per cent polymorphonuclear leukocytes, 41 per cent lymphocytes, 6 per cent monocytes and 1 per cent eosinophils. The erythrocyte sedimentation rate was 42 mm./hr.; the total serum proteins measured 7.2 Gm./100 ml.; and electrophoretic analysis showed 933 mg./100 ml. gamma globulins.

Barium Enema (Figures 2A and 2B) showed evidence of considerable improvement, and there

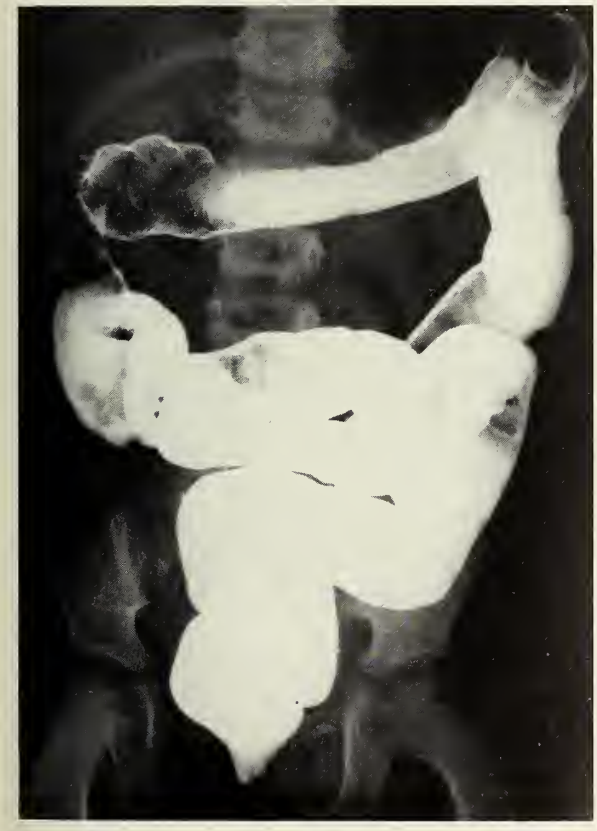


Figure 2A



Figure 2B

were no residual signs of ulceration of the colon. The cecum, and the ascending and right half of the transverse colon were somewhat shortened, and were diminished in diameter. No mucosal abnormalities were to be seen in any portion of the colon.

CLINICAL AND PATHOLOGIC MANIFESTATIONS

Pseudomembranous enterocolitis is an inflammation of the gastrointestinal tract associated with mucosal ulceration and the formation of a pseudomembrane. The entire gastrointestinal tract may be involved, from the esophagus to the rectum, but the jejunum, ileum and colon are most frequently affected. Many different conditions may be associated with the formation of a pseudomembrane: heavy-metal poisoning (arsenic and mercury), pyemia, uremia, various terminal malignancies, Addison's disease, paralytic ileus, acute and chronic bowel obstruction, acute shock, some specific dysenteries, and infarctions leading to necrosis of the bowel wall. Thus, it is clear that the intestinal tract may react similarly to a multitude of injurious agents.

The literature on this topic, during the pre-antibiotic era, dealt almost exclusively with acute postoperative pseudomembranous enterocolitis in adults. It was seen following a variety of surgical procedures, but in the vast majority of instances it followed abdominal surgery, particularly of the intestine. The immediate postoperative course was uneventful, but later the patients complained of mild abdominal discomfort, they became distended and they started passing frequent, watery stools. Vomiting supervened and sudden, acute, irreversible shock ensued. Supportive therapy consisted of maintenance of blood pressure and restoration of fluid and electrolyte balance.

Pathologically, one finds the small or large bowel, or both, to be dilated, with a little fibrinous material adhering to the serosa and some discoloration of the bowel in the involved areas. Associated mesenteric lymph nodes are enlarged and inflamed. Submucosal edema thickens the wall, and the lumen is occupied by a yellowish, fibrin-like membrane which may be adherent to the denuded mucosa. Removal of this membrane reveals an underlying hemorrhagic surface. Development of this gross appearance probably follows an initial vascular congestion and subsequently submucosal edema. As the mucosa degenerates, cellular debris, fibrin and leukocytes are deposited upon the surface to form a membrane.

The theory that antibiotics are responsible for the occurrence of this syndrome is based principally upon the presence of Micrococcus pyogenes (Staphylococcus) in the stools. In pre-antibiotic days, stool cultures (when taken) failed to grow enteropathic or any other unusual organisms. But many writers have pointed out that the media which were employed routinely for "stool cultures for enteric pathogens" inhibit the growth of Staphylococci, and in consequence we have no way of knowing whether or not they were present in many of the earlier ones of the reported cases. Blood agar containing 0.25 per cent phenylethyl alcohol is recommended for the isolation of Staphylococci.

Parenthetically, it might be said that the gross and microscopic findings of pseudomembranous enterocolitis and staphylococcal enteritis are essentially identical, and only bacteriologic studies can differentiate them.

A review of 94 cases of postoperative membranous enterocolitis occurring between 1925 and 1952 has been published by Pettet *et al.*[1] All of the patients died postoperatively and were found to have extensive membrane formation. Of 45 cases reported between 1925 and 1939, none were diagnosed correctly *antemortem,* and of 49 reported between 1939 and 1952, only 14 were diagnosed correctly before death, and all of those 14 were ones that occurred between 1948 and 1952. In 71 cases, there was some type of septic process evident at necropsy, yet prior to 1952 no stools were cultured on a medium favorable to M. pyogenes. Because of evidence of sepsis and, in many cases, partial obstruction of the gastrointestinal tract, these factors seem to have been of prime importance.

Antibiotic therapy would seem etiologically unimportant, except for the fact that most antibiotics in common use are ineffective against M. pyogenes. But that exception is an important one. By continuing their use in the presence of that organism, we run the danger of producing superinfections. Ninety per cent of M. pyogenes isolated in 1943 were sensitive to penicillin, but in 1955 only 30 per cent were sensitive to it.[2] There are many case reports of staphylococcal enteritis in patients for whom antibiotics had been prescribed for a variety of disorders. Some of them had had no previous gastrointestinal disease, some had had no surgery and others had had neither. Clinically and pathologically, cases involving no surgery are similar to postoperative ones.

There has been little in the literature about this entity in children. Diarrheal disorders are frequent in youngsters, and because pediatricians appreciate their potential seriousness they treat them energetically. Perhaps many cases of membranous enterocolitis are thus arrested in the incipient stages. In adults, severe diarrhea probably is less frequent and its severity less impressive.

Beatty *et al.*[3] studied the protocols from 1,333 necropsy reports and grouped together those cases in which there had been functional or mechanical intestinal obstruction, inflammation of the gastrointestinal tract or peritonitis. Ten infants in this group, ranging in age from 10 days to nine months, were found to fulfill the histopathologic criteria of pseudomembranous enterocolitis. Here, arranged in order of frequency, are the factors that seemed to possess etiologic significance in those cases:

Findings in 10 Cases of Pseudomembranous Enterocolitis	*Patients*
Shock (terminal phenomenon only)	8
Intestinal obstruction	5
Antibiotic treatment	4
Non-staphylococcal *sepsis*	3
Recent surgery	2
Staphylococcal enteritis	2

The specific entities, in the patients diagnosed as having intestinal obstruction, were congenital megacolon, pyloric stenosis, intussusception and diaphragmatic hernia. Interestingly enough, there was no evidence of membrane formation distal to the point of obstruction. These findings agree with those which Pettet[1] made in his adult group, particularly as regards sepsis and obstructions.

Moriarty and Ramsey[4] have reported two infants with megacolon who had been treated with large doses of antibiotics. At necropsy, membranous enterocolitis was found.

Friedell and Paige,[5] however, have reported a 12-year-old girl who suffered severe diarrhea, fever and, terminally, shock after treatment of pneumonia with penicillin, oxytetracycline and streptomycin. Other than an appendectomy four years previously, this girl had had no gastrointestinal disturbances or surgery of any type. Gram stains of the pseudomembrane and mucosa showed organisms having morphologic resemblances to M. pyogenes.

Williams[6] reported a case of staphylococcal pseudomembranous enterocolitis in a 15-year-old girl following suprapubic cystostomy. For ten days postoperatively, she recieved tetracycline and oxytetracycline, and then began vomiting and passed frequent watery stools containing M. pyogenes in large numbers. Within two days she was in shock, but eventually she recovered. Despite the administration of 23.9 Gm. of Erythromycin and 255,000 units of bacitracin over a period of two weeks, M. pyogenes persisted in the nasopharynx.

Cramer and Rossi[7] have reported five children ranging in age from 2.5 to 10.5 years who were treated with large doses of oxytetracycline and chloramphenicol and in whom acute pseudomembranous enterocolitis was found at necropsy. All the disorders were medical problems—i.e., meningitis, scarlet fever, atypical pneumonia and paratyphoid B infection. The authors pointed out that 2.5 per cent of pharyngeal smears from normal children reveal enterotoxic-producing M. pyogenes, and said that the incidence rises to 26 per cent in children with pharyngitis and simultanous gastroenteritis. Tolentino[8] feels that infectious parenteral forms are responsible for the increased incidence of gastroenteritis and enterocolitis. He argues that gastroenteritis can be brought about by the toxic action of bacterial products on the central nervous system, the resultant reflex-induced diarrhea and vomiting, and the elimination of bacterial products through the gut.

In children, therefore, staphylococcal membranous enterocolitis has been seen as a complication of a variety of conditions. It can occur in association with primary anatomic abnormalities of the intestinal tract, following surgery of many types and after any number of medical disorders which are commonly treated with antibiotics. But because of the apparently increasing frequency of this disorder since the advent of antibiotics, it is logical to presume that there is some relationship between the two.

Tests have been conducted to determine the production of enterotoxins by M. pyogenes isolated from patients who developed enteritis after antibiotic therapy.[9] The symptoms were similar to those in patients with staphylococcal food poisoning, except that the former frequently progressed to circulatory collapse. In food poisoning, enterotoxin is ingested in a single large dose, perhaps along with a relatively large number of the micrococci responsible for its elaboration. Even though ingested, these organisms are not thought to continue to elaborate enterotoxin, for the normal bacterial flora inhibit their growth and multiplication. Of 33 strains of M. pyogenes studied, 30 coagulase-positive strains produced an enterotoxin in the test situation. Surgalla and Dack[9] suggest that this toxin is produced *in vivo* by antibiotic-resistant M. pyogenes, and may continue to be produced when antibiotics suppress the normal flora. Though appealing, this explanation may be somewhat difficult to prove.

McKay *et al.*[10] produced a pseudomembranous enterocolitis experimentally by transfusing dogs with incompatible human blood. Blood given to dogs through the femoral artery caused progressive shock, but though the clinical course observed in the animals was similar to that of human beings, the dogs rarely experienced profuse diarrhea. Pathologically, the intestinal lesions were identical with those found in human beings with membranous enterocolitis. Frequently there was an associated thrombosis of capillaries in the kidneys, and occasionally there were microscopic thrombi in the hepatic and pulmonary capillaries. McKay and his associates concluded that shock is the most important etiologic factor in this disorder, thus agreeing with other investigators—notably Penner and Bernheim.[11] Pettet,[1] however, thinks that shock is secondary to the fluid and electrolyte imbalance which accompanies diarrhea and the formation of intestinal lesions.

THERAPY

Despite differences of opinion regarding etiology, there is unanimity about therapy. In addition to the supportive treatment that has previously been suggested, Erythromycin should be substituted for all other antibiotics. It may seem that this recommendation is indicative of a tendency to ignore the possibility of superinfection, but it certainly does not suggest that the importance of antibiotics and M. pyogenes is negligible.

In fact, the presence of Staphylococci in a patient's stools, either pre- or postoperatively, is regarded by some people as an indication for the administration of Erythromycin before any change in the clinical state has taken place.

On the basis of reports indicating the difficulty of diagnosing pseudomembranous enterocolitis, it is conceivable that many cases are, in fact, unrecognized. For approximately 12 months before an abdominal laporotomy, our patient had received antibiotics intermittently, but diarrhea had not been a problem. Shortly after laporotomy and further antibiotic therapy, the course was extremely precarious. Though no mention was made of diarrhea in the postoperative period, there was no confirmatory evidence of perforation, obstruction or peritonitis to account for the difficulty. A broad-based Meckel's diverticulum found at exploration was not thought to have been a factor in the illness. Subsequent recurrent attacks of acute gastroenteritis were coincident with or followed febrile illnesses for which antibiotics had often been prescribed. Generally, smouldering chronic intestinal symptoms persisted between the acute episodes. The questions are: did this child have an acute pseudomembranous enterocolitis and survive it? did he have some other nonspecific enterocolitis? and does he have a persisting chronic enterocolitis now? It is conceivable that his illness could be an early manifestation of regional enteritis or ulcerative colitis. Perhaps this is an example of the type of nonspecific enterocolitis described by Cooke and Brooke.[12]

This nonspecific enterocolitis may present as a steatorrhea, but there is roentgenographic evidence of colitis. In all of Cooke and Brooke's cases there were histories of diarrhea—usually more or less continuous, though occasionally quite intermittent. Complaints of periumbilical pain, glossitis and aphthous ulcers in the mouth were common. The stools contained fair amounts of mucus, pus and sometimes blood. Roentgenographically, "deficiency patterns" were found in the small bowel, and colitis in the ascending portion of the large bowel. Pathologically, the lesions in both areas tended to be ulcerative. In raising the question of whether an acute pseudomembranous enterocolitis could have produced a permanent disorder of intestinal function, such as is seen in nonspecific enterocolitis, the authors stated that there was no supportive evidence of any such thing, though it was theoretically possible. In addition, they remarked that there was no evidence in their patients that the onset of symptoms had followed antibiotic therapy.

Merliss and Hoffman,[13] however, have stated that broad-spectrum antibiotics of themselves may produce a sprue-like syndrome—a diarrhea producing a fatty, mushy stool. Under prolonged therapy, there may be evidence of secondary deficiencies such as a macrocytic anemia.

The initial level of gamma globulins, in the patient at University Hospitals, was less than one would anticipate in an individual with a history of repeated infections. The literature concerned with enterocolitis contains no mention of studies on serum gamma globulins. But in reviewing reports of agammaglobulinemia, one finds several cases in which chronic diarrhea was a problem.[14, 15, 16, 17] All of these cases have been reported since the advent of antibiotics, and though the reports may reflect the value of antibiotics in prolonging the lives of such children, they may instead indicate that antibiotics are responsible for the apparently increasing incidence of enterocolitis. However, many cases of hypogammaglobulinemia have been treated by means of prolonged courses of antibiotics without manifesting intestinal disturbances.

Because hypogammaglobulinemia is now being seen in adults, it must be assumed that this disorder can be acquired in later life and is not necessarily a congenital abnormality. When first reported, it was thought to be a congenital disorder of males only, but now several cases have been reported in females.[18, 19] Young *et al.*[17] have pointed out that adults with hypogammaglobulinemia rather frequently present with an enterocolitis evidenced by a fully developed sprue-like syndrome. Wall and Saslaw[15] have reported a 40-year-old man who had had a severe diarrheal disorder for approximately two years before electrophoretic studies of the serum showed very low gamma globulins. Frequently, in that two-year period, routine serum protein determinations had revealed a marked reduction in both total proteins and globulin fraction. An upper-gastrointestinal series showed a "diffuse enteric disease," and though a barium enema was normal, sigmoidoscopy revealed "granular mucosa which bled very easily on trauma." During the course of this illness, the patient had received a variety of antibiotics.

From the studies that have been performed to date, the following have been suggested as possible causes of hypogammaglobulinemia:

1. A genetically determined chemical malformation, with the loss of synthesis of gamma globulin
2. A deficient supply of protein precursors—e.g., malnutrition
3. Idiopathic familial dysproteinemia
4. Selective hepatic dysfunction
5. An increased rate of protein catabolism—e.g., nephrosis, leukemia and sprue-like syndromes.

In considering the patient described in this report, one cannot reasonably explain any susceptibility to infections on the basis of hypogammaglobulinemia. There are cases[20, 21] in which much lower gamma globulin levels have been found, and such patients were no more subject to infections that normal individuals are. Thus, it is apparent that the critical level of gamma globulins is uncertain, and one cannot predict a patient's capacity to produce antibodies or resist infection simply

by estimating his level of serum gamma globulins. Eight months prior to his admission, this boy had been given a single injection of gamma globulin, and subsequently he experienced his longest period of relatively good health. Studies of his blood for gamma globulins had been performed elsewhere, 13 months prior to his admission to University Hospitals, and his parents had been told than there was no reason for giving him gamma globulin. The report of that determination is unavailable at present, but it is conceivable that the level was nearly normal. At least, it was considered sufficient at that time. The half-life of gamma globulin, as determined by the administration of homologous gamma globulin labeled with I^{131}, is 20.3± 4.1 days in children,[17] and we can thus assume that any gamma globulin that had been given to this youngster eight months previously would not still have been circulating in measurable quantities at the time of his admission to University Hospitals.

It remains to be seen just how much benefit this child will get from dietotherapy and avoidance of antibiotics alone. Judged on the basis of his improvement during one month, his outlook seems favorable. In the final analysis of this case, antibiotics appear to be of primary etiologic importance. The abnormalities in serum proteins that were found initially, during his first stay at University Hospitals, should be accepted with reservations. It is very unlikely that one month of conservative treatment could have produced such a marked change. Yet Krebs[22] has reported an uncomplicated case of hypogammaglobulinemia in a 15-year-old girl who had been suffering from severe malnutrition, in whom a high-protein diet increased gamma globulins from 0.15 to 0.68 Gm./100 ml.

SUMMARY

A case of chronic pseudomembranous enterocolitis has been reported. This entity and staphylococcal enteritis have been discussed. The possible role of hypogammaglobulinemia in the pathogenesis of the patient's illness has been considered.

Undesirable side effects may detract from or offset the therapeutic advantages of any drug.[23, 24, 25, 26, 27] It is becoming common practice, under the influences of medical training, pharmaceutical promotion, and current medical and surgical routines, to administer antibiotics prophylactically whenever it is presumed that contamination might occur during elective surgery and whenever it is felt that the patient (or the patient's parents) expect them. We should realize that many bacterial organisms have inherent resistance to antibiotics, and that many others are rapidly acquiring resistance. By the indiscriminate use of antibiotics, therefore, we may mask the basic disease or produce conditions far more serious than those for which the agents were originally prescribed.

Pseudomembranous enterocolitis is only one of a multitude of complications which may arise secondarily, but unlike many others, it is attended by high mortality and perhaps morbidity. It is hoped that this paper will help to alert physicians to this increasingly frequent and heretofore usually fatal disorder, so that they will recognize it promptly and undertake corrective measures.

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Partial Cystic Fibrosis of the Pancreas: A Clinical Entity

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DES MOINES

An entity which was probably cystic fibrosis of the pancreas was first described by Home[1] in 1813. Subsequently, many cases were reported in the literature, but it was not until 1919 that Passini[2] confirmed the clinical diagnosis of three cases by autopsy. Later, Miller and Perkins,[3] Daffinee[4] and Parmalee[5] presented cases which included both the clinical and pathologic findings. In 1938, Dorothy Andersen[6] was the first to correlate the natural history, clinical manifestations and pathology. She described a disease involving mainly the pancreas and the respiratory tract, and less often, the liver. The pancreatic lesion, she pointed out, interferes only with the enzyme function of that organ, resulting in a clinical condition described as the "celiac syndrome." Andersen postulated that the respiratory complications such as obstruction, emphysema and pneumonia were secondary to a vitamin A deficiency from abnormal fat metabolism in the intestine, and were not due to a primary pulmonary defect.

In 1944, Farber[7] advanced the theory that the defect was in the function of all the mucous glands in that they secreted an abnormally thick, viscid fluid. Thus, the thickened secretions led to obstruction of the pancreatic ducts, which in turn resulted in dilatation, cyst formation and fibrosis. It was also postulated that a similar process was responsible for the pulmonary pathology. In consequence of that theory, the term *mucoviscidosis* was temporarily introduced into the literature, but it was withdrawn after Andersen and Kessler[8] made the keen observation, in 1951, that the non-mucous secreting glands were also affected. Andersen and Kessler noted an abnormally high incidence of heat prostration in children with cystic fibrosis of the pancreas. The analysis of the sweat of such children by di Sant' Agnese and his associates[9] showed an abnormally high concentration of sodium, chloride and potassium. The same abnormality was found in the sweat of certain other members of the families of children with this disease.[10] None of the family members were found to have the typical picture of cystic fibrosis of the pancreas, however. Some had chronic respiratory disease, and others had decreased tryptic activity or were completely free of symptoms. These were the early observations which led to the conclusion that the disease may exist in a partial form.

The purpose of this paper is to point out that patients with cystic fibrosis of the pancreas need not have involvement of *both* the pancreas and the respiratory tract, and that the involvement may manifest itself independently. Two cases illustrating the partial disease, and one with the complete form will be presented, and the pertinent points of each of them will be discussed briefly. Reference will be made to the incidence and to the problems of differential diagnosis. The significance of the sweat test will be discussed, and the procedure will be described because of its importance to the diagnosis of the disease. Meconium ileus is a well-known phase of this disease that occurs in the newborn period and is a cause of intestinal obstruction, but it is not germane to this discussion and will not be considered further.

REPORT OF CASES

Case No. 1, J. C., was 26 months of age when first seen in the outpatient department at Raymond Blank Memorial Hospital. The history, in chronological order, is as follows. The patient's birth weight had been seven pounds eight ounces. He did not regain his birth weight until after two weeks. He was hospitalized at the age of five months with bilateral bronchopneumonia. Following that illness, the child's growth and development were excellent. At the age of 24 months he was hospitalized with severe dehydration and possible whooping cough. At that time, the cough had been present for two months. His appetite had been poor for one week, and he had been vomiting continually for three days.

On admission, the patient was severely dehydrated, in moderate respiratory distress and acutely ill. His chest was filled with many fine rales and rhonchi. His dehydration and respiratory infection responded poorly to vigorous therapy. A consultant saw the child at this time and felt the family history of allergy, the child's clinical course and the physical findings were compatible with asthma. The dehydration, he thought, was secondary to acute gastroenteritis. At the time of discharge, the attending physician wrote, "I do not feel that we have adequately explained the severe degree of toxicity and dehydration." Following discharge, the patient started having large, bulky, foul-smelling stools.

At the parents' request, the patient was referred

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to an allergist, and he rehospitalized him for intensive anti-allergic therapy. After seven days' treatment with ACTH, epinephrine, Tedral suppositories and Panmycin, there was no appreciable improvement. The child was then referred to another pediatric consultant.

Physical examination revealed a thin, poorly nourished, chronically ill child who coughed in paroxysms. The patient's chest was filled with rhonchi. He had a potbelly and some wasting of the buttocks.

Because of his history of chronic paroxysmal cough, his episode of dehydration, his failure to respond to ACTH, his debilitated physical state and the x-ray picture of emphysema and fibrosis, the patient was admitted to the hospital as a possible case of cystic fibrosis of the pancreas.

The important laboratory work was as follows. There were 27,000 white blood cells, with a shift to the left. The stool and duodenal fluid examination for trypsin was negative in all dilutions. The viscosity of the duodenal fluid was increased. The fat iodine absorption test revealed no iodine in the urine after 10 hours. And sweat electrolytes revealed sodium in concentration of 105 mEq./L, and chlorides, 110 mEq./L. A culture of the sputum grew out a hemolytic Staphylococcus aureus, coagulase positive. The chest x-ray showed emphysema, bronchopneumonia and fibrosis. The above findings confirmed the diagnosis of cystic fibrosis of the pancreas, and the child has improved moderately on antibiotics and Viokase therapy. The family history, except as regards allergy, was not significant.

Case No. 2, L. D., was first admitted to Blank Hospital at five months of age. His birth weight had been 10 pounds, and at five months his weight was only 11 pounds, 13 oz., in spite of a good appetite. He had had a cough since he was five weeks of age and had received antibiotic therapy on eight different occasions for respiratory infections. Stools were passed about once a week and were normal in consistency, color and odor. Chest x-ray showed emphysema and pneumonia, suggestive of cystic fibrosis of the pancreas. The stools were checked for trypsin on gelatin film and showed normal proteolytic activity. A culture of the pharynx revealed hemolytic Staphylococcus aureus. The patient was discharged with a diagnosis of bronchopneumonia and emphysema because the diagnosis of cystic fibrosis could not be substantiated.

The child got along fairly well after discharge and was relatively free of respiratory difficulty until he was four years old. He was then admitted to the hospital for investigation of a mild wheezing that had been present for a year, and a severe wheezing and cough that had persisted for three weeks. Stools were entirely normal.

For many years, an older brother had been treated for asthma, but in other respects the family history was not significant.

Laboratory work showed a white blood cell count of 21,000 with a left shift. Tryptic activity of the stool was present in 1:10 to 1:100 dilutions with the gelatin film test. Skin tests revealed from 2+ to 3+ sensitivities to many substances.

The patient was discharged with a diagnosis of bronchial asthma and was started on antihistamines. He had no major difficulty for about ten months, but then his wheezing became worse and failed to respond to epinephrine or cortisone. It became obvious that the patient's entire difficulty was not due to the asthma. Therefore, he was readmitted and investigated further as a possible case of cystic fibrosis of the pancreas. Stools for trypsin were again positive in 1:10 to 1:100 dilutions. Duodenal fluid was reported as having 40 trypsin units. In the sweat, the sodium concentration was 113 mEq./L, and the chloride concentration was also 113 mEq./L. A culture of sputum grew out a hemolytic Staphylococcus. A diagnosis of partial cystic fibrosis of the pancreas was made, for though the pulmonary component was present, the intestinal component was not present. He has done fairly well on antibiotic therapy. No pancreatic therapy has been given.

Case No. 3, M. H., was referred to Blank Hospital at the age of four years because of frequent, large, foul-smelling stools since birth, poor weight gain in spite of a good appetite, and clubbing of fingers and toes for two years. The history did not suggest that there had been an unusual number of respiratory infections or a chronic cough. The child had always been well and active, and he had shown no symptoms of respiratory disease. As far as his mother could remember, his growth and development had been normal, except that he had always been small for his age. The family history revealed nothing very suggestive of cystic fibrosis. Several cousins and uncles, however, did have chronic sinus infections, and two cousins had clubbed fingers similar to the patient's. Physical examination revealed a four-year-old boy with a height age of three years and three months, and a weight age of two years and nine months. He had a definite potbelly, but no wasting of the buttocks or axillary muscles. All of his fingers and toes were clubbed, without cyanosis.

The significant laboratory work was limited to the following. There was excessive fat in the stool, and there was no trypsin in either the stool or the duodenal drainage. The viscosity measurement of the duodenal fluid after thawing was prolonged to 17 minutes and 42 seconds.* Amylase and lipase were found in decreased amounts. The sweat test was done, and the sodium concentration was found to be 97 mEq./L. A chest x-ray revealed that the heart was of normal size and shape, and that the lungs were clear. The abnormal sweat test confirmed the diagnosis of cystic fibrosis, but without pulmonary involvement. X-rays of the hands did not show bony changes such as are found in osteo-

* Done by Shwachman.

arthropathy. After Viokase had been started, there was marked improvement in the patient's stools and general nutrition.

CASE DISCUSSION

The cases that have been presented typify three forms that cystic fibrosis of the pancreas may take. J. C. is a typical case of the complete disease. He had apparently been in good health until a few weeks before his first admission to the hospital with a diagnosis of dehydration and possible whooping cough. The attending physician felt that the electrolyte imbalance was out of proportion to the vomiting and diarrhea the patient had suffered, but no explanation was found. When whooping cough could not be confirmed, allergy was suspected as the cause of his persistent paroxysmal cough. During a later admission, the patient was treated intensively for asthma without clinical response. Attention was then directed to the possibility of cystic fibrosis of the pancreas, and the diagnosis was confirmed.

L. D. was suspected of having cystic fibrosis of the pancreas as early as five months of age because of his poor weight gain in spite of a good appetite, repeated respiratory infections, and typical x-ray picture of emphysema, atelectasis and pneumonia. However, this diagnosis was dismissed because of normal stools and tryptic activity. An older brother had a definite history of asthma, and in consequence an allergic workup was done. Because of the 2+ to 3+ skin tests, the patient's clinical symptoms and positive family history, a diagnosis of asthma was made. For several years, the patient made a good clinical response to the antiallergic therapy, but it then became obvious that his entire difficulty was not to be attributed to allergy. With the work of di Sant' Agnese in mind, the physicians did a sweat test, and the results showed abnormally high electrolyte values. A sweat test was done on the patient's brother and was entirely normal.

M. H. was admitted to the hospital for study because of abnormal stools since birth. A diagnosis of cystic fibrosis of the pancreas had not been seriously considered at first, for there had been no history of an unusual number of respiratory infections, and the chest x-ray had shown no evidence of emphysema and atelectasis. The absence of trypsin in the stools and duodenal drainage further confused the issue until it was realized that the respiratory component need not be a part of the disease. The diagnosis was confirmed by the discovery of an abnormality in sweat electrolytes. The presence of osteoarthropathy in the absence of any detectable lung pathology was an interesting finding. Royce[11] points out that this finding does occur in cystic fibrosis and that these children will eventually develop lung disease.

The exact incidence of this disease is difficult to ascertain. Andersen[12] estimated the incidence at 1.7 per 1,000 births. The postmortem incidence ranges between 2.0 and 4.8 per cent.[13] Di Sant' Agnese[14] feels that this disease "accounts for virtually all cases of pancreatic deficiency, for a majority of those with chronic (non-tuberculous) lung disease, and one-third of the children with cirrhosis of the liver and portal hypertension." Since Andersen first described this disease entity, it has been playing an increasingly important part in the pediatric age group. At Boston Children's Hospital only 105 cases were seen from 1938 to 1947, but 52 were diagnosed during 1952 and 50 in 1953.[13]

With the advent of the sweat test, an ever increasing number will be diagnosed. At Blank Memorial Hospital during the past year, the diagnoses have been confirmed in five cases which would have been difficult without the sweat test.

Early in the disease, the symptoms are suggestive of many different diseases. A few of the more common ones are listed below.

TABLE 1
SYMPTOMS

	Case No. 1 J. C.	*Case No. 2* L. D.	*Case No. 3* M. H.
Failure to regain birth weight in the usual time	+	+	?
Voracious appetite	+	−	+
Abnormal stools	+	−	+
Retarded physical growth and development	+	±	+
Persistent cough	+	+	−
Wheezing respirations suggestive of asthma	+	+	−
Recurrent infections; bronchopneumonia	+	+	−

TABLE 2
LABORATORY FINDINGS

	Case No. 1 J. C.	*Case No. 2* L. D.	*Case No. 3* M. H.
Duodenal fluid			
Viscosity	↑	−	↑
Trypsin	−	+	−
Stools—trypsin	−	+	−
Chest x-ray	+	+	−
Pharyngeal cultures	Staph.	0	Staph.
Sweat electrolytes	↑	↑	↑

TABLE 3
DISEASES TO BE RULED OUT IN DIFFERENTIAL DIAGNOSIS

Chronic otitis media	Sinusitis	Pertussis
Asthma	Emphysema	Chronic bronchopneumonia
Atelectasis	Laryngeal stridor	Gastrointestinal allergy
Celiac syndrome	Hirschsprung's disease	Prolapse of rectum
Food intolerance	Dehydration and acidosis	Heat prostration

At one time or another many of the above diagnoses had been made on the cases presented in this paper. It is important that the physician include cystic fibrosis of the pancreas in his differential diagnosis when he sees patients with per-

sistent respiratory tract infections and/or unusual gastrointestinal tract disturbances.

The extreme variations which the disease process may present are, of course, dependent upon the system involved. Whether complete or partial, however, cystic fibrosis of the pancreas involves the sweat glands. It was the observation of di Sant' Agnese *et al.* that provided the clinical evidence which established cystic fibrosis of the pancreas as a definite entity. Earlier, Zuelzer and Newton[15] and Gibbs *et al.*[16] had referred to incomplete or subclinical cases on the basis of pathologic material.

Many of the patients with the partial disease were found in the same families with children having the complete form.[10] Twenty-three per cent of the family members who were investigated had abnormally high sweat electrolytes. Sixty-five per cent of these had some type of chronic respiratory disease, but had tryptic activity within a normal range. Adults as well as children were found to have abnormal sweat electrolytes. Some of the adults had respiratory involvement, but others were completely free of symptoms. One 44-year-old parent who had high sweat electrolytes was found to have emphysema and chronic pulmonary infection, but normal tryptic activity.

Patients with the partial disease who at first show only the respiratory complications may have a progressive decrease in the pancreatic function, and if followed long enough, a certain number of them will be found to develop complete pancreatic insufficiency.[17] A small group of patients have been found with little or no respiratory involvement, but with various degrees of decreased pancreatic function.[10, 14] If these patients can remain free of respiratory complications, they have a relatively good prognosis. It is also known that if patients can reach late childhood without permanent pulmonary injury, they improve, and the clearing of their x-ray pictures is surprising.[13]

THE SWEAT TEST

The sweat test is a simple procedure to perform. It does not present the technical difficulties of duodenal intubation, and it is also more inclusive in its diagnostic significance. Patients with chronic respiratory disease and pancreatic disorders other than that of cystic fibrosis have normal sweat electrolytes. Renal and adrenal insufficiency have been ruled out as causes of the abnormal electrolytes in these patients.[10]

In the studies on sweat electrolytes by the di Sant' Agnese group,[10] sweat electrolytes in 43 patients with cystic fibrosis were found to be from two to four times as high as in 50 controls.[11] The range for chlorides in patients with fibrocystic disease was 60-160 mEq./L., whereas in controls the range was from 4-80 mEq./L. (see Figure 1). The differences are of definite statistical significance. Contrary to general belief, the volume of sweat in the two groups did not differ significantly. When the sweat electrolyte content of the complete and the two types of partial disease are compared, there is no statistical difference.

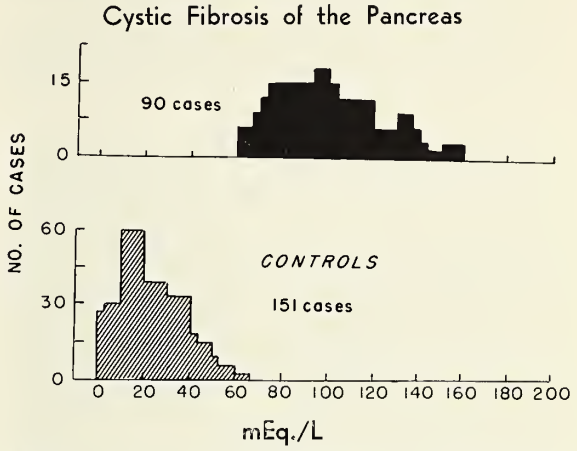


Figure 1. Concentration of chloride in the sweat of patients with cystic fibrosis of the pancreas and of a control group. Sweat is from midabdomen or scapular region. Reprinted from di Sant' Agnese, P. A.: Fibrocystic disease of the pancreas, generalized disease of exocrine glands. J.A.M.A., **160**:846-853, (Mar. 10) 1956.

Abnormalities in the salivary glands have also been noted in patients with cystic fibrosis of the pancreas.[14] There is a marked increase in the rate of secretion of the parotid glands as well as an increase in the electrolyte content. When the salivary electrolyte concentrations of patients with cystic fibrosis of the pancreas are compared with those of controls, there is considerable overlap. Therefore, salivary electrolytes are not considered diagnostically useful.

The equipment necessary for carrying out the sweat test may be found in any size of hospital. Shwachman[13] describes his procedure as follows: "No special preparation of the patient is necessary. The back is washed with sterile water, it is dried, and a three-inch-square gauze pad is placed on the back. A slightly larger piece of plastic sheeting is placed over it and taped to the skin with adhesive. The patient is then placed in a plastic suit and covered with a blanket. At the end of 30-90 minutes, depending on the rate of sweating, he is taken from the bag. The plastic sheeting is removed. The sweat-soaked gauze pad is placed (use forceps) in a stoppered Erlenmeyer flask, previously weighed with the same dry gauze pad. The difference in the two weights represents the weight of the sweat collected. Then 40 cc. of distilled water is added to the flask and the chlorides determined by the method of Schales." Small children must be watched carefully during the test because shock may be precipitated if the sweat and electrolyte loss is excessive. The danger may be minimized by the administration of oral electrolyte solution during the procedure.

SUMMARY

1. Three cases of cystic fibrosis of the pancreas have been presented to illustrate the various clinical forms that this disease may take.

2. The clinical manifestations of the partial forms of the disease have been discussed.

3. The sweat test has been described, and its significance in cystic fibrosis of the pancreas has been pointed out.

ADDENDUM

Since this paper was originally submitted for publication, two simplified tests have been described for determining sweat electrolytes.[18, 19] The first is of value only as a screening test for estimating the concentration of chlorides on the skin surface. The patient's hand is pressed against a sensitized silver nitrate agar plate. The degree of color change indicates the approximate chloride concentration present. After using this as a screening test, one need not subject children to the sweat test unless a high chloride level has been detected.

The second test utilizes a cholinergic drug. Methacholine is injected subcutaneously to induce localized sweating. The sweat is collected from the local area by the same means as were described in the passage quoted from Shwachman's 1955 paper.

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New York AMA Meeting Will Be Outstanding

Physicians attending the AMA's 106th Annual Meeting in New York City June 3-7 will find a star-studded revue of exhibits, scientific lectures, medical films and color television programs arranged for their pleasure and enlightenment. Approximately 18,000 physicians are expected to participate. Focal point of the meeting is to be New York's new exhibition hall, the Coliseum, in which four floors are to be devoted to technical and scientific exhibits, many of the scientific sessions and the color television programs. Headquarters for the House of Delegates will be the Waldorf Astoria Hotel.

Beginning the general scientific program on Monday morning, June 3, will be a review of recent progress in surgery, and the afternoon session will deal with recent advances in medicine. Tuesday morning's general meeting will feature a discussion on the use and abuse of mood-altering drugs in daily practice. The section meetings, which will take place from Tuesday afternoon until Friday morning, will feature many special symposia and panel discussions. The Section on Miscellaneous Topics is to consist of sessions on allergy, legal medicine (including a mock trial concerned with the testing of drinking drivers) and methods of improving communication in medicine. Special exhibits on fractures, perinatal mortality, pulmonary function tests, fresh-tissue pathology, arthritis and nutrition will also be presented. The color television facilities will present live surgical procedures from Roosevelt Hospital.

A foreign air is being added to the regular medical film program for the first time. More than 20 foreign countries are sending special films dealing with many aspects of medical science to the "international medical film program." Both the international and the regular film programs are to be shown at the Barbizon Plaza Hotel.

Registration officially opens at the Coliseum on Monday at 8:30 a.m. and closes Friday noon. Advance registrations will be accepted on Sunday from 12 noon until 4:00 p.m. The exhibit hall will be open to "doctors only" on Tuesday and Wednesday mornings to give physicians a better opportunity to circulate freely among the technical and scientific exhibits.

Further details are to be found in the JOURNAL OF THE AMA.

Neurologic Symptoms as Initial Manifestations of Acute Leukemia

RUTH McCHESNEY YOHE, M.D.

DES MOINES

The first symptoms of leukemia are known to be extremely variable, but neurologic symptoms are very rarely the presenting complaints. Even rarer is the presence of increased intracranial pressure with no localizing neurologic signs and no clinical or hematologic evidence of leukemia. The purpose of this paper is to present a case in which a relapse of leukemia was preceded by symptoms of increased intracranial pressure, and to review the literature of predominantly neurologic manifestations as presenting complaints in leukemia. The use of the experimental drug Azaserine* in acute leukemia of childhood will also be discussed.

CASE REPORT

L. S., a three-year-old girl, was diagnosed as having acute lymphatic leukemia in December, 1954. Following a remission brought about by cortisone and 6-mercaptopurine, she did well for nine months, or until September 8, 1955, when she complained of headache and experienced morning vomiting. The only significant finding on physical examination was bilateral papilledema.

Laboratory studies showed her hemoglobin to be 11.3 Gm. per cent, her erythrocyte count 3.50 million and her leukocyte count 5,400, with 46 per cent lymphocytes and 54 per cent neutrophils. Abundant platelets were seen on peripheral smear. A lumbar puncture showed a pressure of 400 mm. with the child relaxed, 17 lymphocytes, 159 neutrophils and a protein of 20 mg. per cent. Skull x-rays were normal.

The headaches, morning vomiting and papilledema persisted. Neurologic examinations continued to be completely normal with the exception of the papilledema.

On October 26, 1955, approximately seven weeks from the onset of the initial symptoms of increased intracranial pressure, her liver and spleen were found to be enlarged for the first time. Her hemoglobin was 13.0 Gm. per cent, her erythrocyte count was 4.64 million and her leukocyte count was 12,850, with 91 per cent lymphocytes, 5 per cent neutrophils, 2 per cent bands and 1 per cent eosinophils. The peripheral smear showed immature lymphocytes and inadequate platelets. Bone marrow examination substantiated the impression of a relapse of leukemia. A few days later, multiple retinal hemorrhages were observed in addition to the papilledema.

A clinical remission was induced by means of cortisone and 6-mercaptopurine. The papilledema, retinal hemorrhages and symptoms of increased intracranial pressure disappeared completely. This remission lasted only a few weeks.

With the subsequent relapse, there was no papilledema or other neurologic abnormality. The experimental drug Azaserine was given intravenously, in addition to oral 6-mercaptopurine and cortisone. The drug was discontinued when the patient developed some redness of the tongue, which is reported to be one of the earliest manifestations of its toxicity. She had received a total of 980 mg., or 49 mg. per kilogram.

Five days after the withdrawal of the Azaserine, the patient developed an overwhelming infection and died on January 12, 1956.

An autopsy showed leukemic involvement of the subarachnoid area of the cerebellar hemispheres. The cortex and other portions of the central nervous system were not involved. There was also leukemic infiltration of the spleen, liver, kidneys, lymph nodes, bone marrow and lungs.

LITERATURE

There have been reports of many cases with leukemic involvement of the central nervous system, but few have been reported in which neurologic symptoms were the presenting complaints. Prior to 1935, there had been reports of 146 cases in which there had been some evidence of central nervous system involvement on pathologic examination.[1] Many of those cases had shown no clinical signs or symptoms suggestive of neurologic disease.

The pathologic changes that occur in the brain are either hemorrhage or infiltration by leukemic cells. The leukemic infiltrations, as well as the thrombocytopenia of the disease, predispose to intracranial hemorrhage. Leidler and Russell[2] have reported that the incidence of pathologic changes in the brain is as high as 80 to 90 per cent. Approximately one half of the 67 patients in their series also had neurologic symptoms sometime before death, but none had them at the onset of the disease. Only two of the 67 had the signs and symptoms of increased intracranial pressure characterized by papilledema, headache and vomiting. Those

The author is a resident at the Raymond Blank Memorial Hospital, and her paper won third prize in the 1956 essay contest of the Iowa Pediatrics Society.

* Provided by the experimental laboratory of Parke, Davis & Co.

two had only minimal infiltration, and hemorrhage of the subarachnoid and subdural spaces.

Neurologic symptoms in leukemia are generally regarded as rare. In 1935, however, Schwab and Weiss[1] reviewed 334 cases of leukemia in Boston and found neurologic symptoms in 20.5 per cent. They suggested that neurologic symptoms and signs are often overlooked in acute leukemia. They noted that cranial nerve paralyses and anesthesias were the commonest initial symptoms of intracranial involvement by leukemia. In most of their cases, the spinal fluid showed an increased cell count, elevated protein and high pressure.

The case presented by Schwab and Weiss[1] in 1935 is one of the earliest in which neurologic symptoms were the first indications of leukemia. In the recent literature, additional cases have been reported by Creskoff,[3] Litteral and Malamud,[4] Gauld,[5] and Murphy and Brody.[6] In the three cases reported by Schwab and Weiss,[1] Creskoff[3] and Litteral, and Malamud,[4] there were no clinical or hematologic evidences of leukemia at the onset of the symptoms. There was elevated spinal fluid pressure and pleocytosis in all three cases, and elevated spinal-fluid protein in two of them. Cranial nerve paralysis was present in each of these cases. The length of time until the diagnosis of leukemia became established by clinical and laboratory findings varied from five weeks to four months.

In the three cases reported by Gauld[5] and the single case of Murphy and Brody,[6] the initial complaints were neurologic, but laboratory studies showed anemia or abnormal leukocytes. There was some abnormality of the spinal fluid in each of these cases. Three of them had an elevated protein, two had pleocytosis and one had an elevated pressure. Common initial symptoms were back and extremity pain, and cranial and spinal nerve paralyses.

Of all seven patients who had early neurologic symptoms, none experienced a remission of leukemia. The clinical courses of all of them were characterized by progression of the neurologic signs and symptoms, and death occurred between one and seven months after the onset of symptoms. Of the four cases on whom autopsy findings were reported, all showed infiltration of the meninges. In three cases there was also infiltration of cranial and spinal nerve roots. There was no correlation between the type of leukemia and the presence of intracranial involvement.

Azaserine is a new antibiotic isolated from the culture broth of a Streptomyces. It has been shown that it consistently inhibits the growth of a certain type of sarcoma introduced experimentally into mice. Ellison *et al.*[10] have tried Azaserine in 18 cases of acute leukemia in children in a dosage sufficient to cause mouth ulceration. Three of these children had partial remissions lasting from three to ten weeks. Five other children had a brief decrease in peripheral leukocytes, but had no clinical or bone-marrow improvement.

DISCUSSION

The case presented here is similar to three of the cases reviewed in that the neurologic symptoms occurred before there had been any clinical or hematologic suggestion of acute leukemia. Since our patient had been receiving 6-mercaptopurine, her leukocyte count was depressed. The differential count of 46 per cent lymphocytes and 54 per cent neutrophils at the onset of symptoms did not vary significantly from the differential counts taken during the remission. Another similarity of our case with all of the reported cases in which there were initial neurologic complaints is the presence of abnormal spinal fluid findings. Our case and most of the previously reported cases showed pleocytosis.

Our case differed from the similar ones previously reported. (1) The neurologic symptoms preceded a relapse of leukemia rather than the first episode. (2) There was no sensory or motor involvement, and no neurologic complaint or finding other than headache, vomiting and papilledema from increased intracranial pressure. (3) Rather than being progressive, the neurologic signs and symptoms disappeared with a remission and did not recur before death.

Ordinarily, any similarity between the symptoms of early leukemia and brain tumor would seem very unlikely. However, as in our case, the presence of increased intracranial pressure and an elevated spinal fluid cell count with no evidence of systemic disease is highly suggestive of an early brain tumor. Consideration was given to the possibility that the increased intracranial pressure might have been due to a toxic effect of 6-mercaptopurine, the only drug that this patient was receiving. But no change in the neurologic signs and symptoms followed the discontinuance of 6-mercaptopurine. Leidler and Russell[2] point out that it is very unlikely for leukemia to resemble a brain tumor, even when there is central nervous system involvement. Rather than increased intracranial pressure with no localizing signs, there is usually evidence of nerve-root infiltration. In this case, it was impossible to rule out a brain tumor until the relapse of leukemia became apparent, and the neurologic signs and symptoms subsided with the remission.

It is interesting to note that of the previously reported cases of leukemia with neurologic symptoms at the onset, none had ever experienced a remission. Therefore, to the best of my knowledge, ours is the first reported case in which a relapse of leukemia was preceded by neurologic symptoms. Since more numerous remissions have been achieved in recent years, it seems feasible that there may be more cases in which an exacerbation of leukemia is ushered in by neurologic symptoms.

Our patient responded well to the first course of treatment with cortisone and 6-mercaptopurine.

The first remission was in the ninth month, when neurologic symptoms began, and in the eleventh month, when a clinical relapse occurred. Because the subsequent remission with cortisone and 6-mercaptopurine had been brief, Azaserine was tried. Although the total dose given this patient (49 mg. per kilogram) was slightly below the recommended dosage (50-200 mg. per kilogram), she exhibited one of the earliest toxic manifestations, in that her tongue became red and smooth near the tip. In the absence of neutrophilic response, the overwhelming infection undoubtedly caused her death, and it did so before the ultimate effect of the Azaserine could be completely evaluated.

SUMMARY AND CONCLUSIONS

A case of acute lymphatic leukemia has been presented in which a relapse was preceded by symptoms of increased intracranial pressure. The literature on neurologic symptoms as presenting complaints in leukemia has been reviewed, and the use of the experimental drug Azaserine has been discussed.

Neurologic symptoms are an unusual manifestation at the onset of leukemia. Even rarer are neurologic findings due to leukemia in the absence of hematologic or clinical evidence of the disease.

A relapse of leukemia may also be preceded by neurologic symptoms, and these symptoms may resemble those of brain tumor.

The presence of increased intracranial pressure is an uncommon finding when there is a leukemic involvement of the central nervous system, but pleocytosis and an elevated spinal fluid protein are frequently found.

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New Films for County Medical Societies

The second film in the AMA-American Bar Association series on "Medicine and the Law," dealing with prevention of professional liability action, will be available from the AMA Film Library after July 1.

The new film dramatically presents four case reports of situations which caused legal action against physicians. The 30-minute black-and-white sound film also demonstrates how a professional liability committee functions. It will be premiered at the AMA annual meeting in New York on June 5.

"The Doctor Defendant" is a companion film to "The Medical Witness" in a series produced by the Wm. S. Merrell Company, Cincinnati, an ethical pharmaceutical manufacturer, as a service to the medical and legal professions. "The Medical Witness" was named by the NEW YORK TIMES as one of the best 16 mm. films produced in 1956. The two films can be booked for showing together at legal medicine seminars.

A new 16 mm., 25-minute color motion picture on the uses of steroids in the treatment of rheumatoid arthritis has been released for showing to professional groups by the research division of the Schering Corporation. The film reviews the chemistry, physiology and clinical application of the new "Meti" steroid hormones in rheumatoid arthritis and other collagen diseases. It presents the most commonly accepted theories on adrenal corticosteroid therapy and reflects the current knowledge on the subject. The film is available without charge from the Audio-Visual Department, Schering Corporation, Bloomfield, New Jersey.

Another new medical film (16 mm., sound and color) is now available from the Medical Film Center of Smith, Kline & French Laboratories, Philadelphia 1. It can be shown in 25 minutes, and reviews the processes of metabolism and shows the etiology and diagnosis of hypometabolism, whether due to subnormal activity of the thyroid gland itself (hypothyroidism) or faulty cellular utilization of the thyroid hormone (metabolic insufficiency). The clinical use of Cytomel, a new S. K. F. Laboratories preparation designed for use in the treatment of hypometabolic states, is demonstrated in the film.

Pfizer Laboratories have recently published a catalog of the films they have available for showing to professional groups. Copies can be secured either from Pfizer detail men or from the Pfizer Film Library, 630 Flushing Avenue, Brooklyn 8. Pfizer is in the process of preparing two new films, "Stress and the Adaptation Syndrome" (based on the work of Dr. Hans Selye), and "An Aid to Therapy: Bacterial-Antibiotic Sensitivity Testing."

The Emergency Treatment of Spinal-Cord Injuries

GEORGE PERRET, M.D.

IOWA CITY

With the increasing number of automobile accidents, spinal-cord injuries are becoming more frequent, and their immediate treatment should be known to every physician. The prognosis of such injuries may depend a great deal upon the first aid treatment given the patient at the scene of the accident and during the ensuing days. His injuries are always grave, and all treatment should be directed toward keeping him alive and keeping his body in the best possible condition for eventual recovery.

TREATMENT AT THE SCENE OF THE ACCIDENT

Since the prognosis of spinal-cord injuries may depend upon the manner in which the patient is handled and transported, the presence of a physician at the scene of the accident would be of utmost value. A careful survey of the situation is necessary, and the patient should not be moved hastily. If the patient is conscious, the diagnosis of a cord injury can be made from the patient's statement that he is unable to feel or move his extremities. If the patient is unconscious, then he should be supposed to have suffered a spinal-cord injury as well as a cranio-cerebral one, and that assumption should be maintained until the diagnosis can be cleared. If an unconscious patient moves all of his extremities spontaneously, there is little likelihood of his having received a spinal-cord injury. However, if on examination he is found to be using his diaphragm but not his intercostal muscles for respiration, then one must assume that a spinal-cord injury is present. The reflexes may be depressed as the result of cord injury as well as cerebral injury. The patient should be kept in a flat, neutral position—preferably on his back or abdomen, if he is found in such a position. His legs should be extended, and his head and neck should be straightened in the axis of the rest of his body and, at the same time, kept in a position which does not interfere with his respiration. From his head to his pelvis, however, no part of his spine should be flexed or hyperextended. In the presence of a spinal injury, any degree of flexion or hyperextension may aggravate the injury and change a reversible lesion into an irreversible one.

In the comatose patient, impairment of respiration is frequently caused either by an accumulation of mucus, vomitus and/or blood in the pharynx or trachea, or by obstruction of the pharynx by the relaxed mandible and tongue. Respiratory difficulties in the conscious patient may result from intercostal and/or diaphragmatic paralysis and inability to expectorate. Clearance of the upper respiratory passages may be lifesaving, and one can easily accomplish it by inserting an oral-pharyngeal airway, or a nasopharyngeal or an endotracheal catheter. Mucus and blood can be aspirated with a syringe attached to a large soft-rubber catheter. If artificial respiration is needed, an anesthesia face mask, into which the physician or a helper can blow, should be placed over the mouth and nose of the patient after clearance of the airway has been assured.

TRANSPORTATION

One should never consider using a passenger car for transporting a patient suspected of having a spinal-cord injury, for obviously he would need to be flexed when lifted through the door of such a vehicle. An ambulance should be called.

The ambulance stretcher should be put flat on the ground next to and parallel with the patient. A canvas stretcher should be avoided, for the patient's back would sag through it. A wide, flat board, a sheet of plywood or a door will serve admirably as a makeshift. If the patient is lying on his abdomen, he should be rolled onto the stretcher, or rolled onto his back and lifted to the stretcher. Four persons are needed for the job, and they must work in close cooperation to hold the patient straight. One should hold the head and neck in the axis of the body; the second should hold the chest and upper extremities flat and straight; the third should hold the abdomen and pelvis; and the fourth should hold the lower extremities. All of their movements should be concerted so that the patient will be moved in a stiff, boardlike fashion. At the same time, some traction should be exerted upon the feet and upon the head. The patient should then be brought to a hospital where adequate first aid and emergency treatment can be given. At no time should the patient's head be lifted so that he may drink a glass of water or smoke a cigarette, for such a movement might be followed by severe spinal complications.

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HOSPITAL ADMISSION

The initial hospital care received by a patient suffering from a spinal-cord injury is of utmost importance, and his eventual recovery depends upon it. It is wise to notify the hospital from the site of the accident that a patient with spinal-cord injury is to be admitted, so that the right type of bed will be awaiting him in the emergency or in the x-ray room. An anesthetist should be present when the patient is admitted to the hospital, especially if there is evidence of respiratory obstruction from mucus or vomitus, or if there is evidence of bleeding in the tracheobronchial tree. There should be prompt suctioning of the trachea and, if necessary, tracheostomy. Treatment for shock should be administered. Lacerations may be debrided and repaired immediately after radiographic examination, or they may be treated later in bed, depending upon their location and severity. The bladder should be catheterized if the patient cannot urinate spontaneously.

X-RAY

When entering the hospital, the patient should be brought to the x-ray room and—again in board-like fashion—lifted to the x-ray table. There, films of the entire spine should be taken in the anteroposterior and lateral positions without the patient's being moved. If there is a need for other films such as those of the skull or extremities, they may be taken at the same time, again without change in the patient's position. In the presence of a fracture dislocation of the cervical spine, Crutchfield tongs should be inserted immediately in the vertex of the skull through two small trephine holes while the patient is still on the x-ray table.

Accurate localization of the site of injury is best determined by finding the upper level of sensory impairment, the upper level of loss of sweating and/or the upper myotome level of muscle paresis and loss of reflexes. It should be remembered that in the thoracic region the sensory segments of the skin correspond to segments of the spinal cord whose position in the spinal canal is one or two vertebrae higher than the dermatomes involved. Thus, a fracture dislocation of the fifth thoracic vertebra with transection of the spinal cord will produce an upper sensory level at the seventh thoracic dermatome.

From the x-ray table, several persons should carefully lift the patient to a bed waiting in the x-ray room.

BED

The patient's bed should have a solid, hard, flat base, covered with a resistant mattress. A plywood board covered with a foam rubber mattress will serve this purpose quite well. An alternating pressure-point mattress, if available, is excellent. A Stryker frame can be used instead of a bed. In case of cervical-cord injury when Crutchfield tongs have been inserted into the skull, skeletal traction must be applied through a pulley at the head of the bed. From 10 to 25 pounds of weight should be applied to the end of a cord attached to the tongs. The patient's head should remain suspended, and its direction should be kept in the axis of the body. Suspension of the head is best obtained when the upper end of the mattress supporting the patient's body is at the level of the shoulders. Some countertraction may be necessary, and it can be obtained by raising the head of the bed, the patient's body thus being made to serve as the counterbalancing weight. Traction should be continued for six to eight weeks, and the head and neck should later be immobilized in a leather collar or a Minerva jacket.

NURSING

Good nursing care is of utmost importance. The patient should have a special nurse 24 hours a day for the first few days after injury, or until his general condition has become stable. The private nurse and the rest of the nursing personnel in charge of his case should be taught how to turn him in log fashion from back to side, from side to back, and from back to the opposite side. Usually, three attendants are required if the patient is to be turned adequately. One should take care of his head and neck; one, his thorax and abdomen; and the third, his lower extremities. It is important that the patient be turned every two hours, day and night, in order that pulmonary difficulties and early pressure changes in the skin may be prevented. At all times, flexion of the patient should be avoided. He should be supported in the lateral position by pillows placed behind his back, a pillow beneath his neck, and pillows between his knees and heels.

SKIN

Following spinal-cord injury, the paralyzed portion of the body below the site of injury is hypesthetic or anesthetic. The anesthetic skin can easily be injured without the patient's knowledge. Pressure sores of the skin are common if the pressure areas are not relieved frequently. Turning the patient every two hours will change the areas of pressure and prevent the development of decubitus ulcers. The sites where these ulcers are most apt to appear are those where there is little padding between skin and bone, and those which bear most weight and pressure. They include the sacrum, the trochanters, the ischia, the knees, the malleoli, the heels and the scapulae. The skin over these pressure areas should be massaged each time the patient is turned. The bed sheets should be smooth and without wrinkles. They should be dry and clean, and should not contain debris or food. Wet sheets will increase maceration of the skin, and wrinkles produce new pressure areas. Rubber foam doughnuts or pads should be used to protect the heels from the underlying mattress, the knees from

rubbing against each other, and the prominent bony areas of the pelvis from pressure on the bed sheets.

BLADDER

Following spinal-cord injuries, the bladder is paralyzed and needs to be evacuated artificially. An indwelling Foley catheter should be inserted into the bladder immediately upon the patient's admission to the hospital, so as to avoid overdistention of the bladder and soaking of the bed sheets by overflow incontinence. At first, the indwelling catheter should be kept clamped and should be opened every two hours. Later on, drainage can be instituted every three or four hours. Intermittent drainage is important and is intended to keep the bladder from shrinking and to maintain some tone in the bladder musculature. If available, tidal drainage should be instituted. The bladder may be irrigated two or three times daily with isotonic sodium chloride solution. The indwelling catheter should be changed every seven to ten days. If urinary drainage is inadequate, one should suspect an obstruction of the catheter and check the bladder for distention. Blood in the urine may suggest either injuries to the urinary tracts or injuries secondary to the introduction of the sterile catheter. Because the presence of the catheter in the bladder is a potential source of urinary infection, it is important that the bladder be completely emptied whenever it is drained, and that the catheter be introduced in an aseptic manner, with precautions against injury to the patient's urethra.

Urotropin or Gantrisin should be given to the patient to help prevent urinary-tract infection.

BOWEL

Bowel distention, which frequently occurs following spinal-cord injury, interferes with an already inadequate respiration, especially if the intercostal muscles are paralyzed. It should be remedied as soon as observed. Oftentimes neostigmine or prostigmine given intramuscularly or per rectal tube may be of great help. Repeated administration of this drug may be necessary. Enemas should be given with caution and in small amounts only, and they should be followed by suction. Because of bowel dysfunction, the instilled water may not be evacuated, and thus may increase the patient's discomfort and bowel distention. Eventual digital evacuation of the rectum may start adequate bowel function. At times, Wangensteen suction of the upper gastrointestinal tract may be lifesaving.

TEMPERATURE

Temperature control is often severely impaired for several days following spinal-cord injury. The patient is often unable to sweat in the paralyzed and anesthetic areas, and this disturbance may produce high fever. The fever should be controlled from the onset by aspirin per os, cold water sponges, open windows, fanning, aspirin by rectum and/or cold water enemas.

NUTRITION

The fully immobilized patient is usually anorexic, and his food intake is poor. In order to keep up his protein balance, it is necessary for him to be on a high caloric (4,000 calories) and high protein (150 Gm.) diet. Because of severe plasma-protein depletion, it may be necessary that he be given small and repeated transfusions of plasma, or better, whole blood. Until the patient is willing or able to eat adequate amounts spontaneously, feeding through a nasogastric tube is advisable. He can then be given a poor-tasting but high-caloric and high-protein formula concentrated in small quantities. He can thus also be fed adequate amounts of vitamins and fruit juices. He should be fed small amounts of formula, and of juices and glucose alternately every hour or two, day and night.

It is important to keep an accurate check on fluid intake and fluid output.

DRUGS

The patient with spinal-cord injury usually has very little pain. His only discomfort may be local pain at the site of the fracture or dislocation of the spine. This can easily be dealt with by means of aspirin or small amounts of codeine. All opiates or substitutes are contraindicated, for they would depress the already precarious respiration.

Some authors recommend a daily dose of 50 mg. of testosterone in the hope of decreasing tissue breakdown. Urotropin or Gantrisin should be given to help prevent urinary infection. Though piromen, according to Windle, decreases fibrosis and glial reaction in the injured spinal cord of animals and thus favors neuronal regeneration, it has not shown similar effects in man. It may be tried, however, once temperature control has become normal again.

LABORATORY TESTS

Among the essential laboratory studies, weekly urinalysis, red blood count, white blood count, and hemoglobin and plasma-protein determinations are necessary. Radiograms of the abdomen and chest are of value every three or four weeks, for kidney or bladder stones or pneumonic processes may thus be discovered.

PHYSIOTHERAPY

Early physiotherapy should be instituted, and should include active exercises of all extremities, normal as well as paralyzed. Resistive exercises should be instituted for the normal upper extremities so as to build up the shoulder-girdle and arm muscles, especially the triceps, for later support and ambulation with crutches. Foot drop should be prevented by applying a board at the end of the bed to keep the feet in a neutral position. All

joints should be massaged and exercised at least twice daily.

DIAGNOSIS

Immediately following severe spinal-cord injury, the patient exhibits flaccid paralysis, loss of sensation, and loss of somatic and autonomic reflex functions. This condition is known as spinal shock, and is characterized by a series of phenomena of inhibition. These phenomena are usually very intense and defy clinical analysis. No clinical sign can give proof of anatomic severance of the cord, but the absence of characteristic clinical signs does not warrant the conclusion that the cord is anatomically intact, and only spinal shock prevails. Radiologic examination indicates neither the presence or absence, nor the degree of spinal-cord involvement, and hence does not furnish a basis for prognosis, good or poor, as to recovery. Radiologic examination may reveal fractures and dislocations only. Complete severance of the spinal cord can occur without any demonstrable radiologic anomalies of the vertebral column.

PATHOLOGY

Current anatomic knowledge of the spinal cord does not explain many of the physiopathologic processes that occur immediately following injury. Secondary reactions arising as sequelae or complications of the primary lesion are little understood and are difficult to evaluate clinically. However, one may assume that the spinal cord reacts to injury in a manner similar to that of the brain. By analogy, one can conceive two types of spinal-cord lesions: (1) direct primary contusion of the spinal cord associated with rupture of blood vessels in the cord, the nerve roots and the epidural space (usually an irreversible lesion); and (2) secondary lesions developing as physiopathologic reactions to the primary one.

At the onset, these secondary changes may be reversible, but if not soon checked, they may aggravate the entire condition and end as extensive, irreversible lesions. The central nervous system reacts to primary injury with concomitant vasomotor disturbances which produce edema. Edema produces massive swelling of the spinal cord and compression, which in its turn increases the circulatory impairment. More severe and far-reaching capillary and venous stasis develops, producing secondary hemorrhages and secondary thromboses, which again enhance the vicious circle with further production of edema and anoxia.

SURGICAL TREATMENT

The goal of local surgical treatment is to furnish the spinal cord with the best possible conditions for eventual recovery. If such treatment is delayed until spinal-shock reactions subside and until full clinical evaluation of the lesion is possible, days or weeks may go by, and the extensive changes which have taken place in the spinal cord may have become irreversible. In open injuries resulting from gunshot or stab wounds, operation is mandatory, but in closed spinal-cord injuries there are no sound criteria for operative intervention. X-ray films of the site of injury rarely give an accurate picture of the bones involved in the fracture, and their interpretation is exceedingly difficult. Fractures found at operation or at autopsy are usually far more extensive than the radiologic evidence has led physicians to expect. Furthermore, as has been said, roentgenograms provide no indication of the degree of spinal-cord involvement.

Traction applied to the head and neck, or to the lower extremities and pelvis, has little effect in reducing a fracture or dislocation of the thoracic and lumbar spine. The adjacent bony and muscular structures of the dorsolumbar spine immobilize it and do not permit adequate reduction. Closed orthopedic reduction of thoracic and lumbar fractures is dangerous, for it may aggravate the extent of injury to the spinal cord or cauda equina.

Many neurosurgeons advise early laminectomy after traumatic shock has subsided—i.e., well within the period of spinal shock, in the second or third day after injury. They advise wide laminectomy for decompression of the spinal cord, and open reduction of the fracture or dislocation at the same time. Thus, surgical treatment is suggested for all thoracic and lumbar injuries.

Other neurosurgeons insist upon more rigid indications for surgical intervention. Thus laminectomy may be performed to decompress the spinal cord when there is evidence of compression, as demonstrated by a block of the subarachnoid space in Queckenstedt's test. The surgeons who follow this criterion assert that evidence of a subarachnoid block usually implies bony encroachment on the spinal canal. In some instances, the character of the dislocation, or the fractured segments of vertebrae encroaching upon the spinal canal, as shown in the x-ray film, are considered sufficient indication for surgical intervention. However, in the absence of such roentgenologic evidence, these surgeons let operative intervention depend upon the presence or absence of the subarachnoid-space block after spinal-cord edema has subsided. Thus, the demonstration of "compression" of the spinal cord is the essential indication for surgical treatment, and not the supposed character of the spinal-cord lesion itself.

A third group of surgeons is most conservative. This group believes that laminectomy is seldom indicated for closed cervical or thoracic-cord injuries, considering that, for the most part, the damage is done at the time of the injury and that no improvement can reasonably be anticipated by decompression of the spinal cord, even in the presence of a subarachnoid-space block. They point out that spontaneous recoveries and various degrees of improvement have been achieved in

many cases not subjected to surgery. They admit that clinical improvement may indeed follow laminectomy, but hold that in such cases there is no valid reason for supposing that similar results might not have been achieved without operation. They also point out that irreversible paraplegia has been observed on numerous occasions after laminectomy has revealed grossly normal spinal cord, dura, arachnoid and subarachnoid spaces, and that patients with complete transverse disruption of the spinal cord and pulpefaction of a cord segment may not differ in their ultimate clinical course from those in whom the cord, on gross inspection at operation, has appeared intact and normal. On the basis of such observation, early surgical intervention cannot be justified.

In cervical-cord injuries, most authorities advocate early traction. Skeletal traction, with the help of the Crutchfield tongs inserted into the cranial vault, is instituted as soon as the patient is admitted to the hospital, and the weight, starting at 10 pounds, can be increased up to 25 pounds until reduction of the dislocation occurs. In the view of some neurosurgeons, laminectomy for cervical-cord injury means adding surgical trauma to the original insult, and thus increasing the rates of morbidity and mortality. Others, however, feel that laminectomy is indicated if, after a few days of skeletal traction, no improvement occurs. One advantage of early laminectomy lies in the visualization and removal of a traumatically ruptured intervertebral disc. To be sure, a diagnosis of intervertebral-disc rupture can be made later, if localizing root symptoms develop. However, ruptured intervertebral discs, especially in the cervical or the thoracic region, can escape notice and, in some cases, compromise the blood circulation of the cord without producing subarachnoid block. Diagnosis might then depend upon myelography at some period after irreversible spinal-cord changes have already taken place.

Fusion of the cervical vertebral bodies through the anterior approach with iliac bone fragments is a relatively simple procedure, and has the advantage of shortening the period of skeletal traction. Fractures of the odontoid process require long-term immobilization of head and neck by traction, cast or operative treatment consisting of fusion of the third, second and first cervical vertebrae to the occiput.

Fortunately, laminectomy has a low morbidity and mortality, and it may play an important psychologic role in the traumatically paraplegic patient whose injury is very often associated with severe psychologic trauma. I believe that the patient becomes better adjusted to his ultimate condition if he feels that everything possible has been done for him. After the surgeon has laid the facts fully before him, he should be offered the right to decide upon surgical exploration. Even if the patient realizes that in most instances laminectomy does not improve matters, he will seldom refuse it if he envisions any possible chance of improvement.

Postoperative treatment remains the same as preoperative treatment. Early standing is emphasized by several authors. They suggest the use of a tilt board to which the patient can be strapped and which can be gradually inclined in a greater and greater degree until, after several days, he is able to stand in a vertical position. It has been suggested that this gradual change from the horizontal to the vertical position be instituted approximately two weeks after injury.

REHABILITATION

Rehabilitation and the use of braces require many months of strenuous and patient work for both the patient and the physiotherapist, and the program of rehabilitation will usually be most successful if it is conducted in a paraplegic center. Unfortunately, at the present time paraplegic centers exist only for combat veterans, and an increasing number of severe paraplegics are being treated in various hospitals where a full, complete and adequate rehabilitation program cannot be carried out. It would be to the advantage of patients, physicians, hospital administrations and the community if the rehabilitation of all paraplegics could be carried out at specialized centers.

LATER TRANSPORTATION

Transportation of the recently injured paraplegic or quadriplegic patient from one hospital to another should be done very carefully. Again, the patient should be kept in a flat, straight, neutral position on a hard but padded stretcher, so as not to aggravate his spinal lesion. Flexion or elevation of the patient's head so as to permit him to drink water or smoke a cigarette can only result in an aggravation of his injury. The patient may be transported in a well-padded bi-valve plaster cast in a neutral position. However, the application of this cast is usually more tedious and difficult than transportation of the patient on a flat stretcher, and may lead to the development of decubiti. During transportation, opiates and their relatives are definitely contraindicated. A Foley indwelling catheter should be in place, and oxygen should be available, especially if the patient has a cervical-cord injury. At times, a tracheostomy might be a life-saving procedure, for it permits ready aspiration of mucus from the tracheobronchial tree. It also allows easy administration of oxygen and the adaptation of a mechanical respirator when edema disturbs the function of the diaphragmatic cervical centers.

ATTEND THE AMA ANNUAL MEETING
NEW YORK CITY
JUNE 3-7, 1957

Symptomatic Giardiasis

MAURICE A. CLAMAN, M. D.

DES MOINES

Although intestinal infestation by Giardia lamblia is no more than infrequently dealt with in medical periodicals and is not even mentioned in some standard medical texts, it is nevertheless a common finding. Various series of stool examinations of children and adults have shown incidences ranging from 13 to 22 per cent. Children under 10 years of age are somewhat more frequently affected than are adults.[1]

The organism, a flagellate, is usually found in the upper part of the small intestine, especially the duodenum, and in the gallbladder, and it can be recovered from duodenal aspirate or fresh stools. The trophozoite is commoner in the duodenal secretion, and the cyst is usually found in the stool.

The clinical significance of this parasite has been discussed at great length, and apparently it is now the concensus that although in the majority of cases it causes no symptoms, it is quite capable of doing so. When symptoms do occur, they usually take one of two forms: (1) an ulcer-like syndrome that is characterized by epigastric pain and vomiting, and is relatively refractory to the usual ulcer therapy; or (2) a diarrhea, frequently accompanied by steatorrhea. The diarrhea is thought to be secondary to duodenal irritation, rather than to demonstrable lesions of the colon.

It has been said that symptoms suggestive of acute cholecystitis have responded occasionally to anti-Giardia therapy, but the reports to that effect have been rather poorly documented.[3, 4]

One makes the diagnosis by first suspecting the presence of the organism and then identifying it. In about 75 per cent of cases exhibiting symptoms, one can find x-ray evidence of pylorospasm and duodenal irritability. The same percentage have eosinophilia.[4]

The usual treatment consists of atabrine (0.1 Gm. three times daily for five days) or chloroquine (1.0 Gm. as a priming dose and 0.5 Gm. every 12 hours thereafter to a total of 3.0 Gm.). Each of these regimens is curative in over 90 per cent of cases.[2] A second course of therapy is usually effective in the small percentage of resistant cases.[2]

Mrs. C. H., a 55-year-old, white widow, was referred to the surgical department of University of Iowa Hospitals with a four-year history of epigastric and right upper quadrant pain which radiated occasionally to the interscapular area and was precipitated most frequently by the ingestion of fried or fatty foods.

For two years, the patient had had about six watery bowel movements daily. At about the time that her diarrhea started, her father, with whom she lived, had had similar difficulty and had been treated by his family physician for "parasites."

The patient's physical examination was negative, except for a moderate obesity. The urine, hemoglobin, white count and differential were normal. The liver studies were similarly normal, the findings being: cephalin-cholesterol flocculation 1+; bromsulphthalein retention 6 per cent; thymol turbidity 2.0 units; and albumin-globulin ratio 4.6/2.3.

The upper gastrointestinal and chest x-rays showed no abnormality except for a small hiatal hernia and an unsatisfactory filling of the duodenal bulb. A cholecystogram showed stones in a functioning gallbladder. Barium enema air contrast x-ray studies were negative, except for some diverticula. Cysts of Giardia lamblia were seen in a fresh stool specimen.

Without being told the nature or the purpose of the medicine, the patient was started on chloroquine, and overnight she changed from six liquid stools a day to one formed stool daily. This improvement persisted throughout her hospitalization.

Two days after the completion of the three-day course of chloroquine, a cholecystectomy was performed on the patient. Her postoperative course was uneventful, and she was discharged on the seventh postoperative day, with instructions to have the other members of her household examined for giardiasis and treated if necessary.

Gross and microscopic studies of the gallbladder revealed chronic cholecystitis and cholelithiasis.

SUMMARY

A brief review of symptomatic giardiasis has been presented, together with a report of a typical case.

Although occasionally productive of symptoms, giardiasis is sometimes overlooked because it is seldom considered in the differential diagnosis of abdominal symptoms. The result of this oversight is, of course, a protracted and unpleasant illness which could be terminated rapidly if specific therapy were inaugurated.

Germane diagnostic and therapeutic measures have been discussed.

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State University of Iowa College of Medicine

Clinical Pathologic Conference

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SUMMARY OF CLINICAL FINDINGS

A 43-YEAR-OLD white man was admitted to the University Hospitals because of pain and swelling of the left leg, and shortness of breath on exertion.

Four months prior to his first admission, the patient had noted extreme shortness of breath on exertion and when talking. A few days later, he had developed a pain in the back of his left leg, with numbness extending into his foot. The foot had become white, and the leg was tender. His physician told him that the pulse was no longer palpable in the left foot, but within 24 hours the left foot returned to normal color and temperature, following hospitalization and anticoagulant-antibiotic therapy. The patient was told then that x-ray films of the chest had revealed a pericardial effusion, and that the white count was elevated. Within 10 days, when he had greatly improved and when his shortness of breath had become less severe, he was discharged from the hospital.

Three months prior to his admission to the University Hospitals, the patient had returned to work, but one month later his left leg became swollen and a low-grade fever developed. On his reentering his local hospital, it was noted that the white blood cell count had reached 20,000 per cu. mm., that his temperature was 100°F., and that fluid was present in his chest. Antibiotics were given, and after several weeks he was again able to return to work. However, he noted vertigo, swelling of the left leg following moderate exercise and shortness of breath on exertion.

Because of these complaints, he was admitted to the University Hospitals four months after the onset of his illness. One week before admission, pain had appeared in the right posterior chest. It became worse on inspiration, but there was no accompanying cough or hemoptysis.

Five years before admission, the patient had suffered from pain, redness and tenderness over a small area on the left thigh. This had lasted approximately two weeks. Three years before admission, he had had a similar condition in his left lower extremity. The following year, varicose veins had been injected in this area. At the age of 20, the patient had incurred bullet wounds through both thighs. There had been no immediate or residual disturbance to the circulation of his legs during the next 18 years. There was no other significant past or family history.

The physical examination revealed a middle-aged man in no apparent distress. The body temperature was normal. The blood pressure was 120/70 mm. Hg. The pulse rate was 80 beats per minute and regular. The respirations were 12 per minute and regular. The heart was of normal size. A split second sound and a Grade I systolic murmur were heard over the apical and aortic areas. Examination of the lungs was normal. The right femoral pulse was stronger than the left. Dorsalis pedis and posterior tibial pulses were absent on the left, but present on the right. There was a brown discolored area over the medial surface of the left knee. The hands were sweating, and there was no clubbing of the fingers.

Examination of the blood revealed a hemoglobin of 14 Gm. per 100 ml., a red blood cell count of 4,910,000 per cu. mm. and a white cell count of 13,000 per cu. mm., with a normal differential. Urinalysis was negative. Sedimentation rate was 48 mm. per hour. Skin temperatures and oscillometric studies taken before and after spinal anesthesia were indeterminate because a hypotensive state developed 45 minutes after the test was started. The ephedrine and oxygen required by that condition vitiated the temperature data. Oscillometry before anesthesia showed no pulsations below the left knee. A biopsy of the left gastrocnemius muscle showed no vascular change. A left arteriogram and venogram showed occlusion of the femoral artery and narrowing of the deep veins, with collateral venous circulation. An electrocardiogram showed findings suggestive of right ventricular strain. A left lumbar sympathectomy was done. The left foot became warm, but 2+ pitting edema developed in that extremity.

The patient was discharged from the hospital with less pain and shortness of breath than he had had on admission.

There was little change in the next two months, except for the development of an ulcer on the left foot. On a return visit, an electrocardiogram showed right ventricular strain. The hemoglobin was 18.5 Gm. per 100 ml. The hematocrit was 52 per cent. There were no L.E. cells in the peripheral blood. Protein bound iodine was 12.8 micrograms per 100 ml. The I^{131} uptake was 8 per cent in 4 hours, and 23 per cent in 24 hours. The basal metabolic rate was –25. Cardiac fluoroscopy showed an increase of hilar vascular markings, but a decrease of the peripheral pulmonary vascular markings.

The heart size was within normal limits. The Danzer ratio was 0.49.

During the next eight months, the patient remained at home, but developed progressive shortness of breath. He returned to the hospital one year after his first admission with severe shortness of breath and fatigue.

Physical examination revealed marked cyanosis and a Grade 3 systolic murmur to the left of the sternum and over the apex. Blood pressure was 124/84 mm. Hg. The lungs were clear, but the respiratory rate was 34 per minute. The liver was not palpable, and there was no peripheral edema.

X-ray films of the chest showed clear lung fields and mild cardiac enlargement. The Danzer ratio was 0.58. The oxygen content when the patient breathed 100 per cent oxygen was 17.76 volumes per cent. The oxygen capacity was 23.01 volumes per cent. The carbon dioxide content was 29.85 volumes per cent. The hemoglobin was 19.2 Gm. per 100 ml., and the hematocrit was 64 per cent.

On the second hospital day, the patient developed a verbal aphasia, but no other neurologic changes. His shortness of breath became progressively worse. It lessened somewhat after the administration of aminophyllin and a phlebotomy of 500 ml. of blood, but 24 hours later, the patient became acutely short of breath. There was some hemoptysis. The blood pressure was 130 mm. Hg. systolic, with a few expiratory wheezes over the right lung. The wheezes cleared after aminophyllin. The patient was very apprehensive, in spite of breathing 100 per cent oxygen in a tent. Relaxation and sleep followed the administration of 50 mg. of nembutal. Five hours later, the respirations continued to be rapid, the pulse was of small volume and the blood pressure fell to 90 mm. Hg. Then suddenly the respirations became shallow and slow, and the patient died on the fourth hospital day.

CLINICAL DISCUSSION

Dr. Paul M. Seebohm, Internal Medicine: Today, we have the discussion of a patient who was quite perplexing to the physicians who took care of him. One of those physicians who was very perplexed is Dr. Theilen, and he has offered to tell us in detail about the problems that he confronted in taking care of this man.

Dr. Ernest O. Theilen, Internal Medicine: There are several points which were considered in the differential diagnosis of this patient, and I should like to discuss them briefly. The only thing of possible significance in his past history was a shotgun wound in both thighs anteriorly, which he had suffered 18 years before the onset of this illness. The injury was minimal, and there were no obvious sequelae. Furthermore, the story of this man's illness is not that of a traumatic arteriovenous aneurysm. From the history given in the protocol, it is obvious that this man had occlusive disease of the arteries and veins of the lower extremities. Not mentioned in the protocol is the fact that the right ulnar pulse was not palpable. This suggests that we might be dealing with a generalized rather than a localized vascular disorder.

Because of the predominant symptoms and signs of arterial insufficiency in the lower extremities, the physicians who first treated this man performed a sympathectomy. The patient was somewhat improved. However, while in the hospital, he had several episodes of chest pain and dyspnea. Although he had no cough or hemoptysis, and although physical examination and x-ray revealed nothing of significance, these episodes were highly suggestive of pulmonary embolism. Pulmonary infarction does not necessarily follow pulmonary embolism.

What was the nature of this man's systemic arterial disease? It was not embolic. There was no evidence of heart disease. Premature atherosclerosis seemed unlikely. He was not diabetic and had no obvious disturbances of lipid metabolism. Since both arterial and venous occlusions had occurred, Buerger's disease or thromboangiitis obliterans was strongly considered.

Six months after the sympathectomy, dyspnea appeared on exertion. His physician found that he was cyanotic. He was readmitted to the hospital. On examination, he was extremely dyspneic and was hyperventilating. There was moderate cardiac enlargement. A systolic murmur was heard best along the left sternal border. The chest was clear both on physical examination and on x-ray. He had no manifestations of cardiac failure. He remained cyanotic even when receiving 100 per cent oxygen.

Attempts were made to study the arterial blood. However, despite the use of adequate amounts of heparin, the blood clotted very quickly. Polycythemic blood does clot more readily than normal blood, but this man's blood seemed to have an unusual tendency to clot. We did not have an opportunity to pursue our study any further. The patient had paroxysms of dyspnea with increasing frequency, and on the last day of his life, he began coughing bloody sputum. His chest remained clear except for occasional transient rales. On the day of his death, he developed an aphasia.

Why was this man so dyspneic and cyanotic? A diffusion defect in the lungs is unlikely, since it was not possible to increase his arterial oxygen saturation appreciably with 100 per cent oxygen. Could he have had a right-to-left shunt? He must have had either an intrapulmonary or an intracardiac shunt. No large pulmonary arterial-venous shunts had been demonstrated. He did not have congenital heart disease. However, if he had pulmonary artery hypertension and had a patent foramen ovale, an increase in right atrial pressure could produce a shunt from right to left through the foramen ovale. The other possibility is the de-

velopment of small but perhaps extensive intrapulmonary shunts secondary to numerous small pulmonary emboli. This phenomenon can occur in several ways. Although we were certain that this man had a right-to-left shunt, we were unable to say definitely which of the mechanisms mentioned above were operative.

Dr. Carl Gillies, Radiology: The film of the chest showed clear lung fields, with no evidence of arteriovenous fistulae. The heart was of normal contour, and was within normal limits as to size. It is true that in the latter part of the patient's illness, the heart did enlarge slightly. The third film was an arteriogram, showing an occlusion of the popliteal artery. The last film was a venogram which, as noted in the history, demonstrated narrowing of the vein with increase in the collateral circulation. There was no evidence of arterio-venous fistula or a foreign body in the leg.

Dr. John R. Carter, Pathology: How long before death were the films taken?

Dr. Gillies: They were taken approximately 1½ years before the patient's death.

Staff Man: Were any blood cultures taken?

Dr. Theilen: No blood cultures were taken. None were thought necessary.

Dr. Carter: Certain aspects of this case were clarified by the autopsy findings, but it must be admitted that there are other aspects that the gross and microscopic findings do not answer satisfactorily. From a purely descriptive point of view, one can say that the patient did have phlebosclerosis and thrombophlebitis involving the veins of the lower extremities. The phlebosclerosis was characterized by fibrosis, hyalinization and, in some areas, calcification of the vein walls. These lesions were segmental. In other areas, foci of lymphocytes and proliferation of granulation tissue were observed. These changes were consistent neither with syphilis nor with thromboangiitis obliterans nor with any other well-defined entity. The iliac and femoral veins were thrombosed in some areas. Some of these thrombi were recent, some old, and some had undergone organization and recanalization. The veins of the right extremity were similarly involved, but not to the same degree as they were on the left. The iliac and femoral arteries of both extremities showed a rather severe degree of Mönckeberg's sclerosis, characterized principally by rather extensive calcification of the media of the vessels. Although there was marked narrowing of these vessels in several areas, no complete occlusion of the femoral or iliac arteries was noted. Neverthless, old thrombotic material had partially occluded these vessels, and areas of organization, hyalinization and calcification were present. There was massive pulmonary thrombo-embolism. At autopsy, it was not altogether possible to distinguish embolism from thrombosis. Presumably, embolic phenomena initiated the process, and subsequently there was a retrograde thrombotic process involving the primary, secondary and tertiary branches of the pulmonary artery. There was virtually complete occlusion of the main pulmonary artery and the right and left pulmonary arteries by thrombotic material. Much of this was exceptionally old—old to the point of hyalinization, organization and some calcification. Pronounced dilatation of the bronchial arterial circulation was conspicuous. The pleura, for example, was thickened and hyperemic, and histologically it resembled a hemangiomatous pattern. This was the result of the well-developed collateral circulation of the bronchial arterial system. Infarcts of the lungs were present, but they were quite small and old. The collateral communicating channels of the bronchiolar system presumably were sufficient to have prevented extensive infarction.

The endocardium, particularly of the right ventricle, was thickened and scarred, and there was a rather large mural thrombus of the right ventricle. There was cardiac hypertrophy and dilatation, particularly of the right side of the heart. The heart weighed 550 Gm. There was a patent foramen ovale—a significant finding in this case, as will be pointed out later. Incidental findings included acute tubular degeneration of the kidneys, rather marked visceral obesity, fatty infiltration of the pancreas and fatty metamorphosis of the liver. There was no anatomic evidence of congestive heart failure. From the clinical as well as the pathologic findings, it appeared that the patient had died a respiratory death.

In explaining the clinical manifestations on the basis of the autopsy findings, the following remarks may be pertinent. First, the lung has a double blood supply—the pulmonary circuit and the bronchial circuit. The bronchial arteries arise from the thoracic aorta at about the level of the fifth thoracic vertebra. There are usually three of them, two on the left and one on the right. They enter the mediastinum and the hilum of the lung, and extend along the course of the bronchi and bronchioles. They connect with each other, but normally not with the pulmonary arterial circuit. They have a very rich plexus which ends ultimately in the plexus of vessels in the pleura. In the present case, it would appear that the circulatory pathway was as follows. The pulmonary artery was completely occluded. Blood passed from the left ventricle into the aorta and into the systemic circulation. In addition, blood passed from the aorta into the dilated bronchial arteries subsequently connecting with a precapillary plexus of pulmonary vessels. Thus, blood was passing from the bronchial arterial circuit to the precapillary pulmonary arterial circuit, returning through the pulmonary veins and subsequently into the left auricle. The blood from the systemic circulation returned to the right auricle, extending to the left auricle via the patent foramen ovale. In es-

sence, then, there were two closed circuits. It is difficult to estimate how much blood was passing through the bronchopulmonary circuit. In work with dogs, Liebow *et al.* found that two weeks after ligation of a right or left pulmonary artery, approximately one-third of the blood of the systemic circulation will return via the pulmonary veins, having passed through the bronchial circuit. The cyanosis present in this patient can thus be explained, for much of the blood never passed through the lungs.

Other than the collateral circulation mentioned above, no arterio-venous shunts or fistulae were found at autopsy. No arterio-venous shunts were present in the extremities. Thus, in summary, it would appear that this individual died a respiratory death and that the bronchial circulation was insufficient to carry the load.

Dr. William B. Bean, Internal Medicine: Was the brain examined?

Dr. Carter: No, Dr. Bean, unfortunately permission for an autopsy of the brain was not obtained.

Dr. Bean: Was this a mural thrombus?

Dr. Carter: This was a mural thrombus attached to the wall of the right ventricle near the apex. It was not contiguous with the thrombus of the pulmonary artery.

Staff Man: Do you know why it was there?

Dr. Carter: There was no infarct beneath it. Judging from the tremendous thickening of the endocardium of this ventricle, presumably there had been mural thrombi (or inflammation) preceding the present one. The endocardium in the other cardiac chambers was not thickened. This change was confined entirely to the right ventricle. The thrombus found at autopsy was reasonably recent, but from the histologic sections, it would appear that other and smaller mural thrombi had been present earlier.

Dr. Henry E. Hamilton, Internal Medicine: Was there any platelet count done on this patient?

Dr. Seebohm: There were 172,000 platelets.

Dr. Carter: Generally in Moschcowitz's disease, the thrombi are smaller and they involve the capillaries and arterioles. These thrombi are generally considered to be of platelet origin. In the cases that have been reported, no changes such as those present in today's case have been observed. Furthermore, hemolytic anemia has been a rather consistent feature of Moschcowitz's disease. This patient did not have hemolytic anemia. I agree that there are many unanswered questions in this case, and it is, indeed, difficult to determine the lesion or lesions that initiated this chain of events. One of the more perplexing points is the severe Mönckeberg's sclerosis, for it is unusual to this degree in an individual of our patient's age. No blood clotting studies were performed on this patient.

Staff Man: Was the vascular change confined to the lower extremity, or was it generalized?

Dr. Carter: I can answer that question only partly. The great vessels such as the aorta, the vena cavae and the portal system were not involved by this process. The aorta revealed only a few small plaques. Nor was calcification found in any but the vessels previously mentioned. The mesenteric vessels were not involved. The radial arteries were not examined. How extensive the process was, it is difficult, therefore, to state precisely.

Dr. Theilen: It probably would have been possible in this instance for the cerebral vascular accident to have been a paroxysmal embolus.

Dr. Carter: I think it could very well have been.

Dr. Theilen: At the time it was felt that probably it was a thrombosis, although we didn't really know.

Dr. Carter: It was unfortunate that permission for an autopsy of the brain was not obtained.

Student: Was the appearance at all similar to that of dogs that recover from intravascular thrombosis?

Dr. Carter: Do you mean the sort of change that occurs when thromboplastin is injected intravenously? One of the difficulties in attempting to evaluate the present case is that the thrombotic material is old—extremely old. The material had been present for many, many months—possibly even a year or more. Of course, in animals injected with thromboplastin, the thrombi are much more recent and, I might add, the distribution is somewhat different. Thrombosis occurs in other vessels as well as at the site of injection. In the present case, the thrombo-embolic phenomena tended to be confined to the lungs, heart and lower extremities. There was no infarction of the gastrointestinal tract, for example, and no involvement of the superior or inferior mesenteric arteries or veins.

Student: What role do you think was played by the sclerosing therapy of the varicose veins on the left side?

Dr. Carter: I don't know.

Dr. Seebohm: Do you consider Ayerza's disease an entity, and if so, was there any similarity between that entity and these findings?

Dr. Carter: *Ayerza's disease* has come to mean many different things to different writers. To some it is any case of cardiac failure associated with pulmonary arteriosclerosis. To others, it means primary pulmonary sclerosis, and to still others it is a clinical syndrome characterized by dyspnea, cyanosis and polycythemia. The pulmonary arteriosclerosis, as a rule, involves the larger branches of the pulmonary tree, but there may be hyalinization of the tertiary branches as well. Ordinarily, ulceration of atheromatous plaques of the pulmonary aorta does not occur, and the changes generally are milder than those in the systemic aorta. The thickening and hyalinizing changes that were observed histologically in this case would appear to have been the result of hyalinization of old thrombotic material which had become subse-

quently incorporated in the vessel wall and perhaps re-endothelialized. As you know, there is evidence to show that "arteriosclerosis," particularly of the coronary arterial system, is in some instances the result of degenerative changes in old thrombotic material which simulates closely the atheromatous plaque. The changes in this case, therefore, are not those which are usually associated with so-called "Ayerza's disease."

SUMMARY OF NECROPSY FINDINGS

The principal findings were related to occlusive thrombo-embolic disease. There was a large mass of thrombotic material involving the entire main pulmonary artery and extending into both branches of this vessel and into the secondary and even tertiary branches in both lungs. This thrombus virtually occluded the lumina of these vessels at all levels. The thrombotic material was old and showed extensive organization, hyalinization and, in some areas, recanalization. The extent of these changes indicated that propagation had occurred over many weeks and was an insidious but progressive process. The lungs were partially collapsed, and infarcts of varying sizes and ages were scattered throughout both lungs. The visceral pleura of both lungs, as well as multiple adhesions, were thickened, strikingly vascular and hyperemic. The vascular channels extended into the lung parenchyma and were so numerous that they closely resembled a hemangiomatous or telangiectatic pattern. In part, the vascularity of the pleura was probably the result of the pleuritis secondary to infarction. It is by virtue of these vascular "shunts" that blood from the bronchial system was capable of sustaining life for so long, in spite of the occluded pulmonary arterial circuit. The pulmonary veins were distended and congested. No pneumonitis was observed.

There was hypertrophy and dilatation of the right side of the heart. The endocardium was greatly thickened, and a large, old mural thrombus undergoing organization was present on the endocardial surface of the right ventricle. There was no infarction. The aorta showed only minimal atherosclerosis. The vena cavae and portal systems were normal.

The left iliac vein was greatly thickened, and the lumen was narrowed, but not completely occluded. The left femoral vein was occluded by an old, organized thrombus in which some recanalization had occurred. The right iliac vein contained a large, movable thrombus. All of these arteries and veins showed medial calcification, with considerable subintimal fibrosis and scarring. There was no extensive inflammation, although in some segments of the veins there were scattered foci of lymphocytes and granulaton tissue.

Other findings will be noted in the list of diagnoses. The principal cause of death was respiratory insufficiency.

NECROPSY DIAGNOSES

1. Phlebosclerosis, with old and recent thrombi, iliac and femoral veins, bilateral
2. Mönckeberg's sclerosis, iliac and femoral arteries
3. Thrombo-emboli, massive, old, pulmonary arterial circuit, bilateral
4. Infarcts of lung and kidney, old and recent
5. Proliferative telangiectasis, pleura and adhesions
6. Endocardial scarring, with mural thrombus, right ventricle
7. Cardiac hypertrophy and dilatation, predominantly right-sided
8. Acute tubular degeneration, kidneys
9. Visceral obesity with fatty metamorphosis, liver and pancreas
10. Hemangioma of liver.

Des Moines Mental Clinic Gets Grant

It was announced on March 15 that the U. S. Public Health Service will make possible the establishment of a clinic for the daily treatment of disturbed children in Des Moines. It will be operated by the Des Moines Child Guidance Center.

The $195,000 that U.S.P.H.S. will provide will cover the Center's additional operating expenses for a five-year experimental period. Larger quarters are being sought, and it is expected that 16 children at a time will be provided treatment (80 to 100 annually), beginning about six months from now.

It is said that the project will be the only one of its kind in the nation. The children will be at the clinic eight hours each day, returning to their families overnight. This program will be carried on in addition to the present one, in which about 400 children per year come to the clinic for only a few short visits each.

At present, about 50 per cent of the Des Moines Child Guidance Center's clientele are referred to it by physicians, about 30 per cent by public and private social agencies, and about 20 per cent by the courts. No more than 10 per cent of the Center's income is derived from fees.

Coming Meetings

Out of State

May 1 — **Second Annual Trauma Day.** Univ. of Nebraska Coll. of Med., Omaha

May 1-3 — **American Association of Genito-Urinary Surgeons.** The Homestead, Hot Springs, Virginia

May 1-11 — **Pain Syndromes: Diagnosis & Treatment by Regional Block.** Univ. of Pennsylvania, Philadelphia

May 1-31 — **Clinical Obstetrics (Harvard University).** Boston Lying-in Hospital

May 1-31 — **In-Residence Training in Pulmonary Diseases.** Kansas Univ. Medical Center, Kansas City, Kansas

May 3-4 — **Western Gerontological Society, Annual Scientific Meeting.** Women's Club, 465 Post Street, San Francisco.

May 3-5 — **Annual Meeting, Student American Medical Association.** Sheraton Hotel, Philadelphia.

May 4-5 — **Second Annual Meeting, Southwest Society of Nuclear Medicine.** Texas Medical Center, Houston.

May 4-5 — **American Psychosomatic Society.** Haddon Hall Hotel, Atlantic City

May 4-7 — **American Association for Thoracic Surgery.** Palmer House, Chicago

May 5 — **American Federation for Clinical Research.** Chalfonte-Haddon Hall, Atlantic City

May 5-8 — **Aero Medical Association.** Shirley Savoy Hotel, Denver

May 5-9 — **Kansas Medical Society.** Allis Hotel, Wichita

May 5-10 — **National Tuberculosis Association.** Muehlebach Hotel, Kansas City

May 6-8 — **Twenty-eighth Annual Meeting, Aero Medical Association.** Shirley Savoy Hotel, Denver

May 6-8 — **Application of Histochemistry to Pathology.** Walter Reed Army Medical Center, Washington, D. C.

May 6-9 — **American Urological Association.** William Penn Hotel, Pittsburgh

May 6-9 — **American Trudeau Society.** Muehlebach Hotel, Kansas City

May 6-10 — **Surgery of Colon & Rectum.** Cook County Graduate School of Medicine, Chicago

May 6-10 — **Introduction to Electrocardiography.** Univ. of Minnesota Center for Continuation Study, Minneapolis

May 6-17 — **General Surgery.** Cook County Graduate School of Medicine, Chicago

May 6-17 — **General & Surgical Obstetrics.** Cook County Graduate School of Medicine, Chicago

May 6-17 — **Clinical Use of Radioisotopes.** Cook County Graduate School of Medicine, Chicago

May 6-17 — **Dermatology.** Cook County Graduate School of Medicine, Chicago

May 6-18 — **Course II, Internal Medicine.** Cook County Graduate School of Medicine, Chicago

May 6-24 — **Cardiology.** New York University, New York City

May 6-31 — **Anesthesiology.** New York University, New York City

May 7-9 — **Annual Meeting, Wisconsin State Medical Association.** Milwaukee

May 9-11 — **Allergy.** Tufts University College of Medicine, Boston

May 10-11 — **Annual State Meeting, Nevada A.G.P.** Riverside Hotel, Reno.

May 12-13 — **International Society of Bronchoesophagology.** Philadelphia

May 12-15 — **American Society of Maxillofacial Surgery.** Minneapolis

May 13-15 — **Electrocardiography.** Tufts University College of Medicine, Boston

May 13-15 — **Gastroenterology Review.** Univ. of Colorado Medical Center, Denver

May 13-15 — **Minnesota State Medical Association.** Hotel St. Paul, St. Paul

May 13-15 — **Medical Society of the State of New York.** Hotel Statler, NYC

May 13-16 — **Nebraska State Medical Association.** Hotel Paxton, Omaha

May 13-16 — **Annual Meeting, Nebraska State Medical Association.** Hotel Paxton, Omaha

May 13-17 — **General Surgery.** Cook County Graduate School of Medicine, Chicago

May 13-17 — **Proctology for G-P's.** Univ. of Minnesota Center for Continuation Study, Minneapolis

May 13-17 — **Dermatology & Syphilology.** New York University, New York City

May 13-17 — **Cystoscopy.** Cook County Graduate School of Medicine, Chicago

May 13-17 — **American Psychiatric Association.** Morrison Hotel, Chicago

May 13-18 — **Topics in Clinical Medicine.** Johns Hopkins University, Baltimore

May 13-24 — **Surgical Technic.** Cook County Graduate School of Medicine, Chicago

May 13-24 — **Pediatrics.** Cook County Graduate School of Medicine, Chicago

May 13-24 — **Gastroenterology.** Cook County Graduate School of Medicine, Chicago

May 13-24 — **Modern Concepts & Management of Allergy.** Roosevelt Hospital, NYC

May 13-24 — **Advanced Course in Urology.** New York University, New York City

May 14-16 — **Annual Meeting, Mississippi State Medical Association.** Biloxi

May 14-16 — **Ohio State Medical Association.** Neil House, Columbus

May 15-17 — **The G-P in Anesthesia.** Rochester General Hospital, Rochester, N. Y.

May 15-17 — **American College of Cardiology.** Washington, D. C.

May 15-17 — **New Mexico Medical Society,** Santa Fe

May 16-17 — **Medical Ophthalmology and Ophthalmoscopy.** University of California, San Francisco.

May 16-17 — **Arthritis and Rheumatic Diseases.** University of California, San Francisco.

May 17 — **Seminar on Thyroid Uptake Measurement.** Oak Ridge Institute of Nuclear Studies, Oak Ridge, Tennessee

May 17-18 — **Selected Chest Radiology.** Tufts Univ. College of Medicine, Boston

May 17-18 — **Annual Meeting. American Gastroenterological Association.** Colorado Springs.

May 17-19 — **California Heart Association Annual Meeting.** Lafayette Hotel, San Diego

May 18 — **American College of Surgeons, Northern California Chapter, Semi-annual Clinical Conference.** Sir Francis Drake Hotel, San Francisco.

May 18-21 — **South Dakota State Medical Association.** Cataract Hotel, Sioux Falls

May 18-31 — **Fertility & Sterility.** New York Medical College, New York City.

May 20-21 — **Arrhythmias.** Indiana Univ. College of Medicine, Indianapolis

May 20-22 — **International Voice Conference.** Chicago

May 20-22 — **Glaucoma, With Special Emphasis on Gonioscopy.** Brooklyn Eye & Ear Hospital, Brooklyn

May 20-24 — **Internal Medicine (Am. Coll. of Physicians).** Confederate Memorial Hospital, Shreveport.

May 20-24 — **Early Prevention and Detection of Disease (Am. Coll. of Physicians).** University of Pennsylvania, Philadelphia.

May 20-24 — **Clinical Bronchoscopy.** Cook County Graduate School of Medicine, Chicago

May 20-24 — **Refresher Course in Poliomyelitis.** Children's Medical Center, Boston

May 20-June 14 — **General Surgery I (Harvard University).** Massachusetts General Hospital, Boston

May 21-23 — **Massachusetts Medical Society.** Statler Hotel, Boston

May 21-24 — **Annual Meeting, Illinois State Medical Society.** Sherman Hotel, Chicago

May 22-24 — **Ionic (Acid Base) Balance and Water Balance, and Clinical Applications.** University of Pennsylvania, Philadelphia

May 22-25	**Neurology.** Tufts Univ. College of Medicine, Boston
May 23-24	**Symposium on Alcoholism.** University of Minnesota Center for Continuation Study, Minneapolis
May 23-24	**Colorado Interne-Resident Clinics.** Univ. of Colorado Medical Center, Denver
May 23-25	**Advances in Surgery for Surgeons.** Univ. of Minnesota Center for Continuation Study, Minneapolis
May 24-25	**Ear-Nose-Throat Seminars.** University of California, San Francisco.
May 25-31	**World Congress of Gastroenterology.** Sheraton Park Hotel, Washington, D. C.
May 27-29	**American Gynecological Society.** The Homestead, Hot Springs, Virginia
May 27-31	**Pediatrics.** Children's Hospital of Philadelphia
May 27-31	**Cardiology (Am. Coll. of Physicians).** National Institute of Health, Mexico City
May 27-31	**Internal Medicine (Am. Coll. of Physicians).** New York University, NYC.
May 28-30	**American Goiter Association.** Hotel Statler, New York City
May 29-June 1	**Annual Meeting, Western Branch, Am. Public Health Association.** Lafayette Hotel, Long Beach.
May 29-June 2	**Annual Meeting, Am. Coll. of Chest Physicians.** Hotel Commodore, NYC.
May 30-31	**American Geriatrics Society.** Waldorf Astoria Hotel, NYC
May 30-June 1	**U. S. Section, International College of Surgeons.** Whiteface Inn, Lake Placid, New York
May 30-June 1	**Endocrine Society.** Hotel New Yorker, NYC
May 30-June 1	**American Ophthalmological Society.** The Homestead, Hot Springs, Virginia
May 30-June 1	**American Radium Society.** Quebec City
June 1	**Fifth Annual National Medical Civil Defense Conference.** Waldorf Astoria Hotel, NYC.
June 1	**Colorado Medical Alumni Clinics.** Univ. of Colorado Med. Center, Denver.
June 1-2	**American Diabetes Association.** Commodore Hotel, NYC
June 3-4	**Carbohydrate and Fat Metabolism, and Its Clinical Applications.** University of Pennsylvania, Philadelphia.
June 3-5	**Pediatric Hematology.** Children's Hospital, Philadelphia.
June 3-7	**Management of Mass Casualties.** Brooke Army Medical Center, San Antonio.
June 3-7	**Harvey Tercentenary Congress (on Circulation of the Blood).** Royal College of Surgeons, London.
June 3-7	**Annual Meeting, American Medical Association,** Coliseum, N.Y.C.
June 3-14	**Cystoscopy.** Cook County Graduate School of Medicine, Chicago.
June 3-14	**Surgical Technic I.** Cook County Grad. School of Med., Chicago.
June 3-28	**Clinical Use of Radioisotopes.** Mt. Sinai Hospital, N.Y.C.
June 6-7	**Blood Group Incompatabilities and Erythroblastosis Fetalis.** Children's Hospital, Philadelphia.
June 6-17	**Bronchology, Esophagology and Laryngeal Surgery.** University of Pennsylvania, Philadelphia.
June 7-8	**Pediatrics Seminar.** Children's Hospital, Oakland.
June 7-8	**University of Michigan Conference on Hypertension.** Ann Arbor
June 10-11	**Treatment of Varicose Veins.** Cook County Grad. School of Med., Chicago.
June 10-12	**Ballistocardiography (Am. Coll. of Physicians).** Univ. of Pennsylvania, Philadelphia.
June 10-12	**Orthopedics in General Practice.** New York University, N.Y.C.
June 10-14	**Surgery of Colon and Rectum.** Cook County Grad. School of Med., Chicago.
June 10-14	**Postgraduate Symposium on Basic Sciences Related to Anesthesia.** University of Pittsburgh.
June 10-14	**Thoracic Surgery.** Cook County Graduate School of Medicine, Chicago.
June 10-21	**Modern Therapeutics in Internal Medicine.** New York University, N.Y.C.
June 11-14	**Pediatrics.** University of California, San Francisco.
June 13-15	**Hospital Administration.** Univ. of Nebraska, Omaha.
June 15-29	**Surgical Technic.** Cook County Graduate School of Medicine, Chicago.
June 16-19	**Wyoming State Med. Soc. & Rocky Mt. Med. Conf.,** Jackson Lake Lodge, Wyo.
June 16-19	**Idaho State Med. Association,** Sun Valley.
June 17-19	**Ophthalmology.** University of Minnesota Center for Continuation Study, Minneapolis.
June 17-20	**Postgraduate Course for GP's.** Duke University, Durham, North Carolina.
June 17-21	**Esophageal Surgery.** Cook County Graduate School of Medicine, Chicago.
June 17-21	**Clinical Bronchoscopy.** Cook County Graduate School of Medicine, Chicago.
June 17-21	**Hematology.** Cook County Graduate School of Medicine, Chicago.
June 17-21	**Breast & Thyroid Surgery.** Cook County Graduate School of Medicine, Chicago.
June 17-21	**Annual Meeting, Canadian Medical Association.** Edmonton, Alberta.
June 17-22	**Clinical Hematology.** University of Colorado Med. Center, Denver.
June 17-22	**Fractures & Traumatic Surgery II.** Cook County Graduate School of Medicine, Chicago.
June 17-28	**Cystoscopy.** Cook County Graduate School of Medicine, Chicago.
June 17-29	**Neuromuscular Diseases of Children, Especially Cerebral Palsy.** Cook County Graduate School of Medicine, Chicago.
June 17-28	**Office & Operative Gynecology.** Cook County Graduate School of Medicine, Chicago.
June 17-28	**Surgical Anatomy & Clinical Surgery.** Cook County Graduate School of Medicine, Chicago.
June 19-21	**Summer Clinics.** Children's Hospital, Denver.
June 20	**Joint Meeting, Iowa and Nebraska Academies of General Practice.** Hotel Fontanelle, Omaha.
June 20-22	**Otolaryngology for Specialists.** University of Minnesota Center for Continuation Study, Minneapolis.
June 22-23	**Sixth Annual Symposium on Clinical and Laboratory Technology.** U.C.L.A.
June 24-25	**Chronic Kidney Diseases.** New York University, N.Y.C.
June 24-26	**Gallbladder Surgery.** Cook County Graduate School of Medicine, Chicago.
June 24-28	**Technics of Hypnosis.** U.C.L.A.
June 24-28	**Twenty-fifth Annual Graduate Short Course.** University of Florida, Gainesville.
June 24-28	**Radium Therapy.** Cook County Graduate School of Medicine, Chicago.
June 24-29	**Liver & Biliary Tract Disease.** Cook County Graduate School of Medicine, Chicago.
June 26-27	**Management of Hypertension.** New York University, N.Y.C.
June 27-29	**Surgery of Hernia.** Cook County Graduate School of Medicine, Chicago.

CORRECTION

On the final page (196) of Dr. Jack Moyers' article "Anesthesia for Cardiac Surgery," in the April, 1957, issue of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY, a line of type was omitted. The paragraph beginning near the bottom of the first column on that page should have read as follows: "Finally, one develops a receptive attitude toward new ideas and new thoughts. In a short span of a few years, the efforts of the anatomist, physiologist, internist, hematologist, surgeon, anesthesiologist and many others have enabled in our hospital 11 of every 12 patients to survive operations that previously would have seemed either fantastic or ridiculous."



PREVENTIVE PSYCHIATRY

About 150 people, including 70 invited specialists, attended the first nationwide Institute on Preventive Psychiatry, held on the SUI Campus in Iowa City during the first week in April. They included representative leaders of American universities distinguished for their study of problems in mental health, and state and city public health services, U. S. associations and foundations, public school systems, and medical schools and clinics. Their objective was to chart a course for research in mental health.

Reporting on a study made in New Haven, A. B. Hollinshead, Yale University sociologist, said that the lowest 18 per cent of people in terms of economic, social and educational attainments were found to include 55 per cent of the seriously disturbed individuals, whereas the most prosperous and socially established 28 per cent contained only 18 per cent of the psychotic cases. Furthermore, he said, "Once a patient in the lowest socio-economic stratum is diagnosed as psychotic and is committed to a state hospital, he tends to remain there." In the least-privileged class of his study group, half of the patients have been cared for almost four times as long as the corresponding half in the most highly privileged class.

In attempting to point the way for future research in the prevention of mental illness, speakers seemed agreed that the problem is being over-simplified. John P. Spiegel, of Harvard, declared that it isn't enough just to track down such "villains" as overprotective mothers and indifferent fathers. Milton J. E. Senn, director of the Yale Child Study Center, suggested that many difficulties may stem from the excessive competition of the American way of life and the pressure that is exerted to make everyone conform to established patterns. "Let's look at the influences in our culture—social, business, educational, religious—to which individuals are forced to adapt themselves," he pleaded. "Let's have the courage to see if some of these influences, rather than just the individuals, can be changed."

Marian Radke Yarrow, chief of the social developmental and family studies section of the National Institute of Mental Health, expressed the opinion that "we have oversimplified children, parents and families in our eagerness for precise answers to problems in child development and mental health." The social influences upon personality are still an almost unexplored area, she pointed out. The individual child's own way of reacting to adults needs a great deal more study. In other words, she concluded, students of child development have tended to rely overmuch on mothers' reports. More study is needed of the whole complex pattern of the reactions between the child, all other members of the family and the whole learning environment.

NOW WE'VE HEARD EVERYTHING!

Please *don't* say you read it in the JOURNAL OF THE IOWA MEDICAL SOCIETY, but we think you will be interested in knowing that a New York City physician has written an allegedly scientific article extolling beverage alcohol for its medicinal benefits. The VIRGINIA MEDICAL MONTHLY has published it, and we are indebted to the Schering Corporation's SCIENCE BULLETIN for calling it to our attention.

In his article,* Dr. John Staige Davis says that for many patients, especially older persons, beverage alcohol used in moderation is "relaxing, pleasant, of nutritional value, and conducive to improved health of body and mind." He recommends it—preferably in the form of a light blended whisky—in the treatment of cardiovascular and geriatric cases, and finds it "of value in treatment associated with arteriosclerosis and diabetes." He also thinks it beneficial in gastroenterology, and says it "is found to ease the pain of arthritis and rheumatism."

As he continues, one gets the impression that he has found a panacea: "Alcohol in moderation contributes to the general well-being. This alone would make it a valuable adjunct in the treatment of a number of diseases, including tuberculosis. Whisky also stimulates appetite and aids the digestion. It is even said to increase selectivity in fertility [whatever that may mean], and there is evidence that moderate drinkers may have a longer life span than total abstainers."

Then he undertakes to refute those who have thought there were some contraindications: "There is no evidence that beverage alcohol has any deleterious effect on kidney function. To the contrary, it is an excellent diuretic. . . . Too, there is no evidence to support the belief that beverage alcohol *per se* has an etiological effect on hepatic cirrhosis. . . . The person who drinks 20 bottles of sweet, carbonated beverages a day is as likely to develop cirrhosis as the person who drinks a pint of whisky every day."

Oh yes, Dr. Davis contends that whisky is good for the cardiac patient, too.

* Davis, J. S.: Medicinal benefits of beverage alcohol. Virginia Med. Month., 84:3-7, (Jan.) 1957.

"AUTOMOTIVE" PYELITIS

The recurrence of urinary-tract pyelitis in otherwise healthy prepubertal children, especially girls, has perplexed all physicians who are called upon to care for them. As a rule, the symptoms respond quickly to one of the usual antibiotics, but recurrence plagues the physician from time to time. Occasionally he finds a urinary-tract anomaly that he can correct, but when intravenous urography and post-voiding films show a lack of residual urine in the bladder, the problem is further confused. He is often inclined, when x-ray findings have been normal, to say that the child will outgrow the condition.

In some instances it has been observed that the recurrences follow long automobile trips, but do not follow comparably long excursions by train or airplane, where adequate toilet facilities are usually available. In the family automobile, the frequency of urination is controlled by the individual behind the wheel. Mileage is very important, and disruptions of schedule by rest stops (usually prolonged by demands for candy, pop, etc.) are unwelcome to him. In consequence of being made to retain urine, the child who has had previous urinary-tract infections frequently becomes ill, with the usual signs and symptoms such as chills, fever, nausea, vomiting, kidney pain and pyuria within 24 hours.

The recurrence many times is due to an unsuspected ureteral reflux in these children, and one envisions it even less because the intravenous urograms are normal and because no residual urine is present in the bladder. Ureteral reflux can occur even though the intravenous urograms are normal, and its presence should be suspected most when the onset of urinary-tract infection has coincided with the end of a long automobile trip.

The diagnosis is rather simple. The bladder is filled to comfort with 10 per cent Skiodan, and x-ray films are taken immediately and every 15 minutes thereafter while the patient retains the material in the bladder. Reflux may not be present on the initial or 15-minute films; it may be present on the 15-minute films and absent on others; and so forth. It becomes obvious that the presence of the reflux as detected radiographically is dependent upon the amount of fluid in the bladder. Once this critical level has been reached, reflux is apt to occur, and organisms that ordinarily are unable to produce clinical infection in the bladder can easily invade the less well-protected kidney.

In the control of such a condition, it is important that the bladder volume be prevented, as far as possible, from reaching the critical level of reflux. This can be accomplished by frequent voidings during the day—at least every hour to 1½ hours, especially when the child is in school. More importantly, it is mandatory that the child be permitted to urinate frequently while on long automobile journeys. It is also of advantage to give small daily doses of an antibiotic for three weeks out of every four over a period of several months to control the infection. Repetition of the delayed cystograms is important, and the absence of reflux on one examination should not lessen the physician's vigilance. It has been shown that ureteral reflux tends to disappear spontaneously, only to recur again.

It is probably good practice to examine the patient at yearly intervals, using delayed cystography until it is certain that the reflux has permanently disappeared. Persistence of ureteral reflux and progressive damage to the upper urinary tract indicate that conservative management has failed, and surgical correction is then mandatory.

DRUG COMBATS ATHEROSCLEROSIS

Though the etiology of atherosclerosis has yet to be determined, many physicians think that an alteration in cholesterol, lipid and lipoprotein metabolism is involved, and in consequence they endeavor to get their patients to cut down on their ingestion of cholesterol and of fat. However, such a dietary regimen is difficult to enforce for a prolonged period because it is extremely unpalatable and rapidly becomes monotonous.

Eli Lilly & Co. has recently marketed a preparation of sitosterols (Cytellin, Lilly) which is said to be indicated in hypercholesteremia, regardless of etiology. Chemically, the sitosterols are closely related to cholesterol. They are white, odorless, tasteless, slightly waxy, crystalline solids, and their key properties are an affinity for cholesterols and insolubility in water. Since they are widely distributed in fruits, vegetables and grains, they are natural dietary constituents. When fat and sitosterols have been ingested more or less simultaneously, the sitosterols and the cholesterols combine and are excreted together.

In clinical studies conducted by Shipley* upon 39 hypercholesteremia patients, divided doses of 9-18 Gm. of beta sitosterols per day over a period of four weeks to nine months produced "considerable" reductions in serum cholesterol concentration in 65 per cent, "moderate" reductions in 25 per cent, and slight or none in 10 per cent.

It is reported that no deleterious side effects have been observed.

To date, Cytellin is strictly for the carriage trade, if not for the owners of private cabin planes. It is derived from pulpwood, and because a year's supply for a single patient requires the wood from 75 acres of pine trees, the annual cost is no less than $300. Besides, there is no point in prescribing it at all if the patient cannot expect to continue taking it for the remainder of his life. Lilly's researchers are trying to find a means of synthetizing it, and thus finding a way to reduce its price.

* Shipley, R. E.: Present status of treatment of atherosclerosis. Proc. Central Sec., Am. Pharm. Mfgrs. Assn., Chicago, Feb. 7, 1955.

MENTAL ILLNESS

STATE OF MIND, Vol. I, No. 1, January, 1957. (Summit, New Jersey, Ciba Pharmaceutical Products, Inc. Free to physicians).

This magazine, published by Ciba as a service to general practitioners, embodies the best principles of professional relationship between pharmaceutical manufacturers and the medical profession. The views expressed in it, the reader is assured, reflect "authoritative professional opinion and are not necessarily the views of the company, nor are they influenced by the commercial interests of Ciba."

The first issue is excellent in that is presents well-rounded discussions of the emotional problems of our culture, and in addition includes articles which offer the practitioner opportunities for sharpening his own concepts of human beings and their activities. Should the magazine continue with the work that its first issue has begun, it will be a publication of importance, usefulness and value to any practitioner, be he generalist or specialist.

MANAGEMENT OF EMOTIONAL PROBLEMS IN MEDICAL PRACTICE, ed. by *Samuel Liebman,* M.D. (Philadelphia, J. B. Lippincott Company, 1956. $5.00).

This book actually is a series of articles for general practitioners. It is instructive in the various psychiatric technics that are utilized in the management of some emotional problems. The contributors are men of reputation, wide experience and long practice in presenting their wide learning in a manner that makes it easily available to readers. They are teachers of psychiatry at various universities or foundations in widely separated parts of the United States.

The various conditions discussed include psychiatric emergencies; the management of anxiety; depression; management of multiple complainers; overeating, overdrinking and oversmoking; and, importantly, the avoidance of iatrogenic disease. The last chapter in the book is a discussion of the use that the physician can make of community resources.

This reviewer believes that from the general practitioner's point of view this book is well worth owning. The first chapter, written by Dr. Karl Bowman, recently of the University of California, discusses one of the psychiatric emergencies that the general practitioner faces most frequently—the threat of suicide. The technic for adequately handling this important emotional reaction might seem to have special importance for practitioners in Iowa, for this state is said to have a somewhat higher suicide rate than is average throughout the nation.

The uses of sedatives and stimulants assume considerable importance at this point in medical history, as a result of the stress that is now apparent and the excessive prescribing of these medications. The book contains some significant observations on this subject.

The last chapter, "Utilization of Community Resources," seems likely to bring the practitioner face to face with himself. Besides determining his patients' requirements and his own expectations of them, it is necessary that he discover the means that are available for fulfilling their needs. This requires that he learn to know his community and that he become a full-time participant in its activities, knowing its resources and weaknesses. Such participation can make him and his patients better citizens.

In conclusion, it is the opinion of this reviewer that the book is not excessively technical, but is within the psychiatric knowledge of every adequate practitioner of medicine. The understanding that the physician can gain through reading this volume is well worthwhile.—*Howard V. Turner,* M.D.

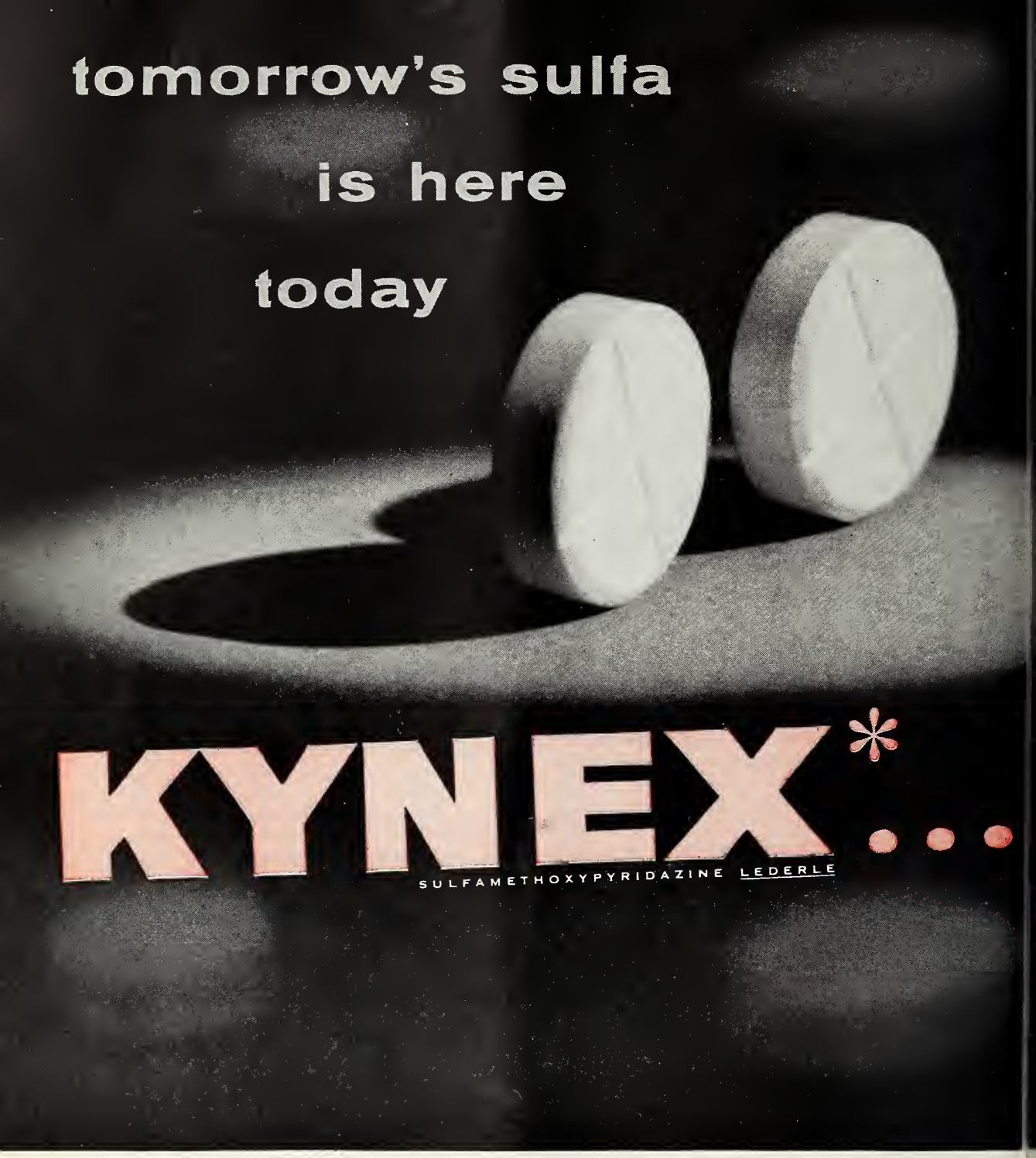
SYMPOSIUM ON ALCOHOLISM

A symposium on alcoholism for physicians will be held at the University of Minnesota's Center for Continuation Study, on the Minneapolis campus May 23-24, 1957, under the cooperative sponsorship of the University and the Minnesota Department of Health. Featured speakers will include Dr. Lorant Forizs, medical director of the Florida Alcoholic Rehabilitation Program, whose topics will be the motivating of the alcoholic and the treatment of alcoholics in groups.

Dr. R. Gordon Bell, director of the Bell Clinic, Willowdale, Ontario, will talk on the nature of alcoholism and the use of drugs in follow-up treatment. He is one of the developers of Temposil. Dr. Vernelle Fox, medical director of the Georgian Clinic, Atlanta, will speak on the use of ataraxic drugs in the treatment of alcoholism. Drs. Nelson J. Bradley and Lloyd Smith, of the state hospital at Willmar, Minnesota, and Dr. K. W. Douglas, superintendent of the similar institution at Sandstone, Minnesota, will also be on the program.

Attendance will be limited, and advance registrations are requested. The fee for the course is $5.

Attend the ANNUAL MEETING of
The American Medical Association
New York City
June 3-7, 1957



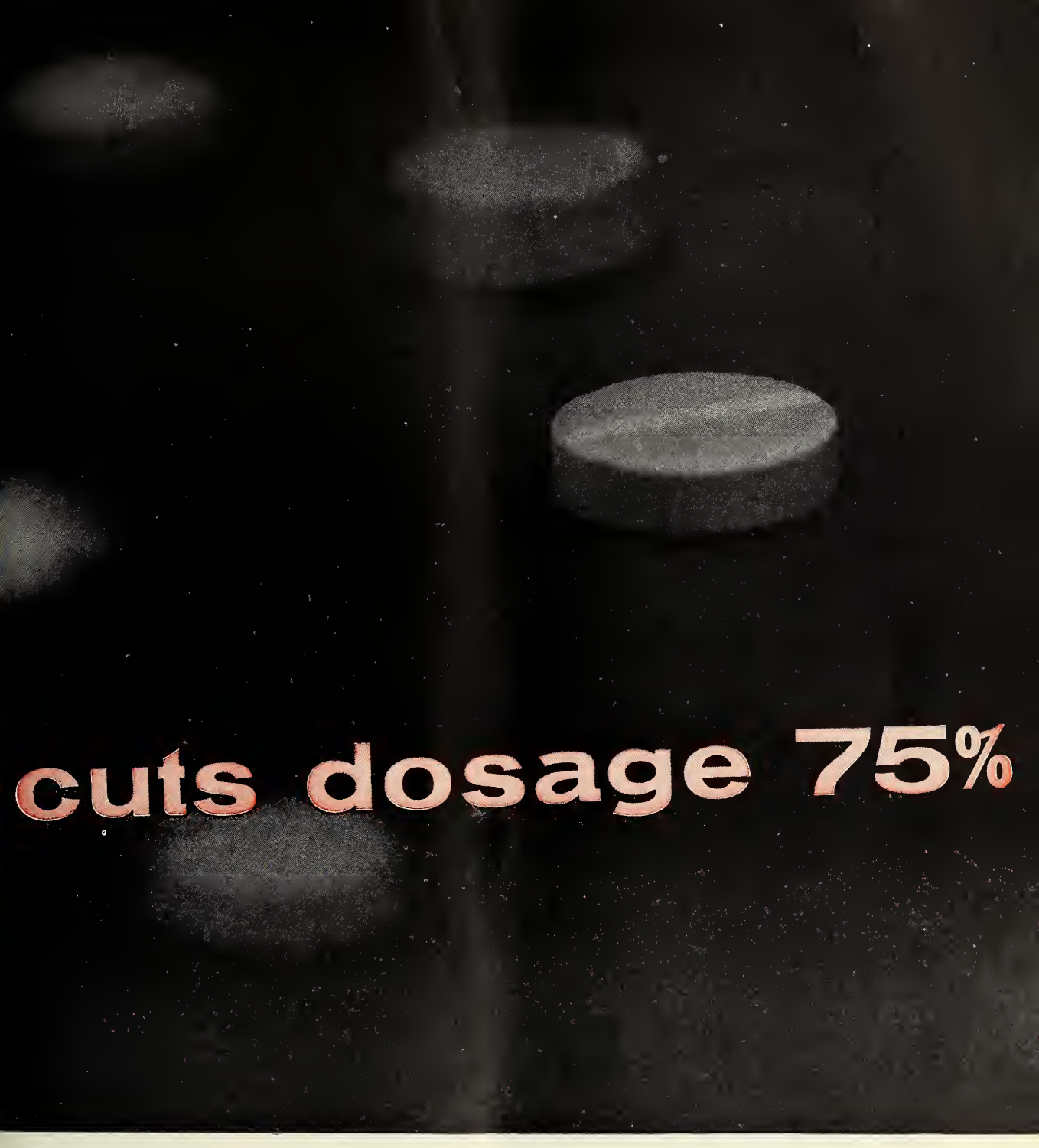
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BOOKS RECEIVED

PRINCIPLES OF UROLOGY: AN INTRODUCTORY TEXTBOOK TO THE DISEASES OF THE UROGENITAL TRACT, by *Meredith F. Campbell*, M.D. (Philadelphia, W. B. Saunders Company, 1957. $9.50).

LIVER, BILIARY TRACT AND PANCREAS, Part III of Vol. 3, DIGESTIVE SYSTEM, (color illustrations), by *Frank H. Netter*, M.D. (Summit, New Jersey, Ciba Pharmaceutical Products, Inc., 1957. $10.50).

THE FIGHT FOR FLUORIDATION, by *Donald R. McNeil*. (New York, Oxford University Press, 1957. $5.00).

PHYSIOLOGIC PRINCIPLES OF SURGERY, by *Leo M. Zimmerman*, M.D. and *Rachmiel Levine*, M.D. (Philadelphia, W. B. Saunders Company, 1957. $15.00).

EXPECTANT MOTHERHOOD, THIRD EDITION, REVISED, by *Nicholson J. Eastman*, M.D. (Boston, Little, Brown and Company, 1957. $1.75).

DORLAND'S ILLUSTRATED MEDICAL DICTIONARY, TWENTY-THIRD EDITION. (Philadelphia, W. B. Saunders Company, 1957. $12.50).

THE DOCTOR AS A WITNESS, by *John Evarts Tracy*. (Philadelphia, W. B. Saunders Company, 1957. $4.25).

NEW AND NONOFFICIAL REMEDIES, 1957, evaluated by the AMA Council on Pharmacy and Chemistry. (Philadelphia, J. B. Lippincott Company, 1957. $3.35.).

MEDICINE IN CHICAGO, 1850-1950, by *Thomas N. Bonner*. (Madison, American History Research Center, 1957. $5.00).

DRUGS IN CURRENT USE, by *Walter Modell*, M.D. (New York City, Springer Publishing Company, 1957. $2.00).

BATTLE FOR THE MIND, by *William Sargent*. (New York City, Doubleday & Company, Inc., 1957. $4.50).

BOOK REVIEWS

CLINICAL RECOGNITION AND MANAGEMENT OF DISTURBANCES OF FLUID BALANCE, Second Edition, by *John H. Bland*, M.D. (Philadelphia, W. B. Saunders Company, 1956. $11.50).

The revision and renaming of Bland's CLINICAL USE OF FLUID AND ELECTROLYTE will be welcomed by physicians in all branches of medicine. The author has completely rewritten the book. He explains the various changes in fluid and electrolytes, and gives the reader a sound and rational basis for their correction. The book is practical and easy to understand. It covers the problem of diagnosis and treatment of fluid and electrolyte disturbances from the pediatric to the geriatric patient.

With the increasing use of hormones in everyday practice, the effect of those substances upon body fluids and electrolytes must be understood and controlled. The answers to this important problem, as well as to many others, are very clearly and concisely stated.

This is a very valuable book for any practicing physician.—*E. Thomas Scales*, M.D.

CORONARY HEART DISEASE: ANGINA PECTORIS: MYOCARDIAL INFARCTION, by *Milton Plotz*, M.D. (New York, Paul B. Hoeber, Inc., 1957., $12.00).

There is no dearth of reference books on the broad field of heart and circulatory disease available to the physician today. It has been a number of years, however, since coronary heart disease was singled out for exhaustive review in a single volume such as this. The brilliant recent developments in the field of cardiac surgery have overshadowed equally significant if less spectacular progress in the attack on coronary artery disease.

The fascinating but confused picture of lipid metabolism in relation to atherogenesis, the modification of the traditional six-week bed rest treatment of myocardial infarction, the contention over the use of anticoagulant therapy, the surgical attack on the problem of coronary sclerosis—these are among the facets of coronary artery disease delineated in the light of the developments of the past few years. Among the new diagnostic methods, ballistocardiography and vectorcardiography are discussed briefly.

There is a very practical chapter on the management of angina pectoris and chronic coronary disease. The author advocates a low-cholesterol, low animal-fat diet, and has included a short chapter in which he gives diet suggestions and menus by which it can be achieved. Prophylactic anticoagulant therapy for impending infarction is discussed.

An unusually complete bibliography is appended to each chapter.—*Herman J. Smith*, M.D.

YEAR BOOK OF GENERAL SURGERY, 1956-1957 YEAR BOOK SERIES, ed. by *Evarts A. Graham*, M.D., with a Section on Anesthesia, ed. by *Stuart C. Cullen*, M.D. (Chicago, The Year Book Publishers, Inc., 1956. $6.75).

The YEAR BOOK OF GENERAL SURGERY FOR 1956-1957 measures up to its predecessors. It contains clear, concise résumés of important articles written during this period on general surgery and ancillary topics.

Septic shock caused by the Staphylococcus has probably gone unrecognized on many occasions. The excellent summary of the article by Haltmire and Cole is most timely.

The current therapy of tetanus described by Hale and Weiksner gives us the last word on this dread disease. Among other things, they state that immunity established in service personnel is found still to be active ten and more years later. They feel that it is best to wait two or three weeks after passive immunization before starting a course of active immunization with toxoid.

All practicing physicians are more and more fre-

quently encountering the need for relieving pain in cancer patients. From the University of Illinois comes an article of great help to physicians who care for these unfortunates. Winship and Chase reviewed 285 articles on thyroid carcinoma in children. Their paper has extreme value, since not many such cases are seen by any one practicing physician.

Cancer of the breast has been written about a great deal. However, from the Royal Victoria Hospital, Montreal, comes an interesting consideration of "The Other Breast."

To surgery of the heart, aorta, peripheral arteries and veins, the editors have devoted 90 pages of the book. An excellent article on cardiac arrest is included. A large portion of the book reviews the newer developments in abdominal surgery. This includes acute abdominal diseases, disease of the pancreas, and of the biliary and gastrointestinal tracts. Portal hypertension is discussed, as well as surgery in patients with hemorrhagic tendencies.

The last 90 pages of the book deal with anesthesia, and have been edited by Dr. Stuart C. Cullen. That section contains much information which the general surgeon should have concerning anesthesia. An excellent index concludes the volume.

To all of you, I can recommend this volume heartily. It is well worth your reading, since it will aid in bringing you abreast of new developments which can be found gathered compactly and clearly into no other single volume.—*Joseph B. Priestley,* M.D.

Year Book of Drug Therapy, 1956-1957 Year Book Series, ed. by *Harry Beckman,* M.D. (Chicago, The Year Book Publishers, Inc., 1957. $6.75).

This reviewer finds some difficulty in reviewing the volume in a reasonable number of words. The format covers the field of medicine from *Allegry* to *Worms.* Articles of importance to each field have been abstracted. The newer drugs influencing affect and behavior are especially well covered, as are the newer steroid compounds and anti-hypertensive agents. The usefulness of this edition, as of the past ones, is enhanced by the modulating influence exerted by the sage, often cryptic and always informative editorial comments.—*Samuel J. Zoeckler,* M.D.

Pediatric Cardiology, by *Alexander S. Nadas,* M.D. (Philadelphia, W. B. Saunders Company, 1957. $12.00).

This first complete textbook on pediatric cardiology has been written primarily for the physician who only occasionally cares for children with cardiac disease. It is not intended as a complete reference book.

The first 128 pages deal with "The Tools of Diagnosis," with emphasis on the usual aids, rather than on catheterization, angiocardiography or phonocardiography. There are 136 pages devoted to rheumatic fever and acquired heart disease. The discussion of steroid therapy for acute rheumatic fever is particularly appropriate and probably represents the most generally accepted thinking at this time. Recommended dosage schedules are included.

The diagnosis and treatment of congenital heart disease have been given 272 pages. The sections demonstrate the value of careful physical examination in the diagnosis of the various lesions. The rapid advances in the field of intracardiac surgery make any recommendations out of date by the time they are published, but the principles involved remain valid.

This book is a valuable contribution to the library of anyone who takes care of sick children.—*John E. Gustafson,* M.D.

Surgery in World War II: Orthopedic Surgery in the European Theater of Operations, ed by *Col. John Boyd Coates,* M.C., *Mather Cleveland,* M.D., and *Elizabeth M. McFetridge,* M.A. (Washington, D. C., Office of the Surgeon General, 1956).

When one stops to think that almost two-thirds of all casualties during World War II in the European Theater involved the extremities, particularly the bones and joints, he is not surprised to discover that many of the advances in treatment were in the field of orthopedic surgery. Fortunately, excellent records were kept, and they made possible the completion of this volume.

The administrative details leading to successful methods of treatment have been recorded, together with suggested policies and practices to be followed in the treatment of compound fractures, regional injuries, amputations, complications, etc. Special types of bone and joint injuries, especially those involving the shoulder, hip and knee, have been discussed in detail. Excellent illustrations enhance the value of the text.

Not only does this volume make an excellent history of what occurred in orthopedic surgery during World War II, but it is especially valuable in outlining methods of treatment which still merit consideration. All physicians would do well to obtain this treatise for their reference shelves.—*Everett M. George,* M.D.

Organized Home Medical Care in New York City, by the Hospital Council of Greater New York. (Cambridge, Harvard Universities Press, 1956. $8.00).

The Commonwealth Fund has published several reports of excellent sociologic surveys of the medical practice of our day, and this book is one of them. This particular survey deals with organized home medical care in New York City. The care of a few of the indigent in New York City is under the jurisdiction of the Hospital Council of New York City.

The concept is a new one to this decade. At times, care for the indigent can best be provided in the patients' homes, rather than in metropolitan hospital inpatient or outpatient facility. The facilities through which Home Care is operated are those of the New York City Department of Welfare, Montefiore Hospital and the New York Hospital Center.

In this report, the investigations are excellently and thoroughly documented, and the advantages and disadvantages of home care are ably recorded. The most important facet of the book, however, is the simple realization it conveys that society is at last beginning to get some basic medicosociologic facts upon which to base the remedial action that will be necessary if we are to care for our increasing population. The book is therefore designed for people who are interested in *social-democratic,* rather than *socialized,* medicine.—*Daniel A. Glomset,* M.D.

Iowa Academy of General Practice

NINTH ANNUAL SCIENTIFIC ASSEMBLY

For those who were so unfortunate as to miss the AAGP's Ninth Annual Scientific Assembly, held in St. Louis during March, the following is a brief résumé.

A review of the publications of the constituent chapters was quite interesting. Some are published monthly and others bi-monthly; some are on mimeographed sheets and others are printed and bound. Our own HAWKEYE GP NEWS was one of the best on display, and its professional listing was surpassed by none.

The transactions of the Congress of Delegates will be reviewed in the annual publication of that body. The following officers were elected: Dr. H. T. Jackson, Fort Worth, president-elect; Dr. Fred Simonton, Chicamagua, Georgia, vice-president; Drs. M. C. Wiginton, Hammond, Louisiana, N. C. Booher, Indianapolis, and Mary Elizabeth Johnston, Tazewell, Virginia, new members of the Board of Directors. Drs. J. D. Murphy, of Fort Worth, and Horace Eshbach, of Drexel Hill, Penna., were re-elected speaker and vice-speaker of the Congress of Delegates.

There were over 75 scientific exhibits, selected on the basis of their relevancy to the problems of general practice, and approximately 200 technical exhibits. Approximately 3,000 physicians registered for the Assembly, 80 of them from Iowa. The Iowa group enjoyed an informal evening and dinner at the Statler Hotel.

SCIENTIFIC PROGRAM

A panel on maternal mortality consisting of Drs. R. A. Reis, of Chicago, H. S. Morgan, of Lincoln, and W. E. Brown, of Little Rock, urged that maternal mortality committees be formed to study mortality and morbidity reports and make recommendations for improving obstetric care. Theirs was a very good discussion, but perhaps would have been better suited for a meeting of civic leaders than for a group of GP's. In a panel on fetal-neonatal mortality and morbidity, Dr. T. V. Geppart, of Madison, discussed respiratory failure, especially in the premature, and Dr. I. H. Kaiser, of Minneapolis, discussed preventive technics for reducing fetal stress from sedation, anesthesia, placental cord accidents and inertia of labor, and reviewed indications for cesarean section.

Dr. J. L. Dill, of Detroit, presented an interesting discussion of "Neglected Ears in Children," stressing the early recognition of hearing defects. He presented an outline for the evaluation of hearing in three-year-olds, so that aid can be given to help in proper speech development. He said he has no hesitation in prescribing a hearing aid for a child that young.

Dr. G. C. Schauffler, of Portland, Oregon, stressed the importance of thorough pelvic examination in young and adolescent females. He gave suggestions for avoiding emotional trauma to the patient and her parents. He reviewed specific conditions such as vulva-vaginitis, vulvar kraurosis and congenital intersexual anomalies, and also discussed the role of the family physician in coping with the results of our "nationally distorted sex perspective."

Dr. W. T. Green, of Boston, stated that foot discomfort is one of the major complaints of adults and often causes inefficiency on the job. Foot disorders, he said, begin during early childhood, but are frequently undetected until later. Inasmuch as the general practitioner sees children during their developing period, Dr. Green says he should make every effort to discover foot abnormalities that are correctable, and should alert parents to the importance of proper last, construction and fit in children's shoes.

Dr. Lawson Wilkins, of Baltimore, attempted to differentiate between true endocrine disturbances resulting from somatic and sexual deviations, and those which are the result of extrinsic causative factors, genetic or constitutional variations, and temporary hormonal imbalances during puberty.

A panel consisting of Drs. C. V. Kusz, of Minneapolis, D. B. Effler, of Cleveland, and J. E. Webster, of Detroit, discussed indications and contraindications for sympathectomy, vascular surgery, surgery of the esophagus, improvements in cerebral angiography and the injection of alcohol as a treatment for Parkinsonism. Among other points, they emphasized that a physical examination of a person over 50 years of age is incomplete without an evaluation of the peripheral circulation.

The interrelationship between the surgeon, the anesthetist and the general practitioner in providing pre- and postoperative care was discussed by Drs. I. S. Ravdin, of Philadelphia, John Adriani, of New Orleans, and J. W. Telford, of San Diego. Al-

though the actual surgery may seem the most important part of the sequence, they pointed out that the comprehensive care of the patient includes such factors as the psychologic conditioning, the maintenance of an adequate volume of circulating blood, fluid and electrolyte balance, postoperative support for respiration, prevention of hypotensive states, and attention to the relatives of the patient. They agreed that the surgery a generalist performs should depend on the individual physician's diagnostic skill and ability to handle possible complications that might arise from surgery, rather than upon years of residency training or upon board membership.

In their discussion of the infertile couple, Drs. J. W. Kelso, of Oklahoma City, and R. N. Creadick, of Durham, North Carolina, centered largely on the pathology of the female and on psychologic infertility. The stress of modern life, they said, apparently is sometimes the cause of a decrease of gonadotrophins.

Dr. G. H. Thiele, of Kansas City, Missouri, discussed the diagnosis and management of anal and rectal pain. Dr. C. M. MacBryde, of St. Louis, discussed the clinical and laboratory means of recognizing acute adrenal deficiencies, and outlined the prompt therapeutic measures necessary for their treatment.

In a symposium on therapy, Dr. H. M. Perry, of St. Louis, gave individual attention to the drugs used in the treatment of hypertension, but also stressed the point that many individuals with elevated systolic pressure are given therapy that they do not really need. Dr. F. M. Berger, of New Brunswick, N. J., discussed the tranquilizing drugs that affect the autonomic nervous system and those that do not, and then he discussed the emotional conditions in which they may be used and their contraindications and side effects.

Dr. E. H. Rynearson, of Rochester, Minnesota, whose topic was "Use and Abuse of Hormones," was both instructive and entertaining in his discussion of "endocriminology"—i.e., too many injections. Dr. W. H. Gordon, of Lubbock, Texas, who spoke on the diagnosis of angina pectoris, was so interesting and informative that his remarks cannot adequately be summarized.

Dr. F. D. Murphy, of Milwaukee, stressed the fact that the meticulous hospital care that is given the cardiac patient is only part of the treatment that must be given him. He felt that the rehabilitation of the patient should begin with emotional stabilization during the acute phase of the disease. He reviewed the rehabilitation programs that have been developed, and evaluated them. The physician's job, he said, does not end until the patient has returned to work.

Dr. L. S. Smith, of Dallas, expressed the opinion that inaccuracy in lab reports results from the employment of "two-week trained" technicians. He said that we should employ only well-trained personnel and should pay them adequately.

Dr. M. L. Barnes and G. S. Allen, of Louisville, discussed cervical biopsies in office practice. Dr. Allen, a general practitioner, had performed more than 600 cervical biopsies. Dr. Thomas Francis, Jr., of Ann Arbor, reported on the use of inactivated poliomyelitis virus. Dr. Philip Thorek, of Chicago, talked dramatically and explosively on the diagnosis of intestinal obstruction, stressing that the condition is a symptom complex rather than a disease entity.

ABSTRACTS WILL BE AVAILABLE

Fortunately, those interested in securing at least abbreviated versions of these lectures will be able to do so. Summaries of all lectures delivered at the Ninth Annual Postgraduate Assembly, together with information on the scientific exhibits displayed there, will be published, and AAGP members are encouraged to order the "Abstracts" from the headquarters office in Kansas City.

SUI WILL COORDINATE RESEARCH PROGRAM

Data that are secured in a USPHS nationwide cooperative research attack against cerebral vascular disease will be collected and evaluated at the SUI College of Medicine, Surgeon General Leroy Burney has announced.

The 10 medical research centers in nine states that have already joined the program are, in addition to SUI, the state universities of Minnesota, Michigan, Pennsylvania and Indiana, and Massachusetts General Hospital, Duke University, Columbia University, Buffalo General Hospital and Washington University, St. Louis. It is expected that 35 to 40 institutions will eventually participate, and the program will last five or six years.

The new cerebral vascular research investigation was made possible by grants totaling $172,000 to the various participating institutions from the National Institute of Neurological Diseases and Blindness of the National Institutes of Health, and by grants from the same source for 29 current individual projects totaling about $250,000.

The cooperative investigation will make possible the study of thousands of patients who either have suffered a stroke or who show clinical signs that a stroke may be coming on. The program is specifically concerned with patients suffering from cerebral vascular disease involving hemorrhage, blood clots, aneurysms and malformations of the arteries or veins of the brain. Dr. Pierce Bailey, director of the Institute, stated that the research results are expected to shed new light on the nature and causes of strokes and to open the way for more effective treatment methods. Another aim is to make possible the more accurate selection of surgical cases. Dr. Bailey said it has been estimated that as many as 1,800,000 living Americans have suffered cerebral strokes at one time or another, and that deaths due to such strokes are estimated at 175,000 annually.

THE DOCTOR'S BUSINESS



The Short Term (Clifford) Trust

HOWARD D. BAKER
WATERLOO

For professional men today, the short term living trust offers substantial tax-saving advantages, but many such individuals neglect it because they lack knowledge of its functions.

The most logical use for such a trust is to meet financial needs of a personal, non-deductible nature. The education of children and support of relatives are the commonest of these.

Such a trust provides for a planned accumulation of funds to meet these needs without imposing a financial hardship upon the doctor when the need finally materializes. By setting up a short-term trust, he can accumulate relatively large sums over a period of years. Second, he makes himself eligible for substantial tax savings.

TAX SAVINGS

Let us assume that Dr. X is in the 47 per cent income tax bracket, and that he has three children for whom he is certain he will expend $12,000 for college educations. He has no securities or miscellaneous real estate, but he does own a medical building valued at $16,000. Since his eldest child is 8 and since a short term living trust must be of at least 10 years' duration, it is necessary that he act immediately.

To accumulate a minimum of $12,000 over the 10-year period will require that he transfer ownership of his medical building to the trust, and then pay $160 per month into the trust. Of each such payment, $100 will subsequently be available for his children's education, since depreciation of the property will be $50 and taxes on the building will be $10 per month.

Annually, $1,200, or $400 each, will accrue for the benefit of the three children, and since Dr. X has leased the building from the trust, the $1,200 per year is deductible expense as rent, and results in an annual tax saving to the doctor of $564, or $5,640 over the 10-year period. The overall result of this trust arrangement is that the $12,000 that he accumulates consists of $6,360 of his own funds and $5,640 of tax savings.

Annual investment return on the accumulations will accrue to the trust, thus increasing the amount that will be available at the same ratio of tax savings. At the end of the 10-year period, the building and the depreciation reserve will revert to Dr. X, and the trust will cease to function.

EXPERT ADVICE IS ESSENTIAL

The two major requirements of the short term living trust are that it be created for a minimum period of 10 years and that it be irrevocable. The trust agreement and related instruments should be handled by an attorney experienced in this area, for although the trust is relatively simple, one can lose tax advantage by failing properly to qualify it.

This trust is not the answer to all financial problems, but it does have wide use and acceptance, and it very well may fit into your financial plans.

WORKSHOP ON SPEECH DISORDERS

The Polk County Speech and Hearing Association is sponsoring a community workshop on speech disorders on Friday, May 10, at the Iowa Society for Crippled Children and Adults, 2920 30th Street, Des Moines. The guest speakers will be Dr. Ernest Fossum, associate professor of speech at I.S.T.C., and Mr. Carl Betts, chief speech and hearing consultant, State Services for Crippled Children. The topics to be discussed are cleft palate, retarded speech, functional articulation, cerebral palsy, stuttering and hearing loss.

For the dinner session which will conclude the workshop, reservations are requested.

STATE DEPARTMENT OF HEALTH

Edward G. Zimmer
COMMISSIONER

MORBIDITY REPORT FOR MONTH OF MARCH

Disease	*Mar. 1957*	*Feb. 1957*	*Mar. 1956*	*Most Cases Reported From These Counties*
Diphtheria	1	0	2	Humboldt
Scarlet Fever	239	182	193	Boone, Clay, Des Moines, Polk
Typhoid Fever	1	1	3	Lee
Smallpox	0	0	0	
Measles	1215	1212	907	Clay, Linn, Polk
Whooping Cough	10	45	58	Pottawattamie
Brucellosis	18	8	24	Butler, Jackson, Polk, Webster
Chickenpox	1105	899	1291	Dubuque, Polk, Scott, Story
Meningococcus Meningitis	0	2	0	
Mumps	752	474	360	Des Moines, Linn, Polk
Poliomyelitis	0	2	1	
Infectious Hepatitis	31	18	51	Davis, Polk, Woodbury
Rabies in Animals	46	17	11	Clinton, Johnson, Plymouth
Malaria	0	0	0	
Psittacosis	0	2	2	
Q Fever	0	0	0	
Tuberculosis	44	23	25	For the State
Syphilis	79	67	51	For the State
Gonorrhea	66	45	64	For the State
Histoplasmosis	1	0	0	Warren
Food Intoxication	0	0	0	
Meningitis (type undet.)	1	1	4	Marion
Diphtheria Carrier	0	0	0	
Asceptic Meningitis	0	0	0	
Salmonellosis	5	0	18	Polk
Blastomyecosis	0	0	0	
Tetanus	0	0	1	
Chancroid	0	0	1	
Coxsackie B-5	0	0	0	
Encephalitis	0	0	0	
Influenzal Meningitis	1	0	0	Story
Amebiasis	3	1	5	Greene
Clostridium Welchii	0	0	0	
Shigellosis	0	0	1	

SCATTERED OUTBREAK OF SALMONELLA

The staff members of the State Hygienic Laboratory, in Iowa City, would like Iowa physicians to send them samples from any Salmonella infections that they have a share in discovering. Following confirmation, the specimens will be sent to the Communicable Disease Center in Atlanta, Georgia, for further study and typing.

On March 26, the U. S. Public Health Service reported that approximately 200 cases of severe gastroenteritis and septicemia due to Salmonella have occurred in 20 states during the past three months. Until January of this year, the report continued, the type of Salmonella in question have been extremely rare in this country. The source, USPHS has concluded, appears most likely to be some food item or food ingredient distributed from the Pacific Coast to New England.

The infection seems so far to have affected infants and pre-school children, for the most part, the median age of 57 patients having been 3½ years. Many cases have been so severe as to require hospitalization. No preponderance as regards sex has been noted.

The increase in the incidence of Salmonella infections actually began in August, 1956. Of 265 cases reported since that time, the majority have been in the eastern part of the United States. The northeast states have reported 132 of them, and the north central states, including Iowa and Minnesota, 76.

During the past two years, Iowa has had a few reports of Salmonella in chickens and turkeys, but there had been no human cases reported until February of this year. Since then, one case has been found in Lee County, a two-year-old girl, and one in Polk County, a two-year-old boy. Both of those patients were hospitalized. No epidemiologic contacts between those two youngsters have been established.

V-D REPORTING BY PRIVATE PRACTITIONERS

With the development of shortened treatment schedules and the swing from inpatient to outpatient management of syphilis, a steadily increasing proportion of syphilis cases are being treated by private physicians. Though this change might have made incidence statistics more difficult to gather and epidemiologic work more difficult to plan than they used to be, a very fine cooperation between the Department of Health and the doctors of Iowa is apparent from the results that have been achieved.

In 1947, the Department began a program of solicitations or letters of inquiry designed to get doctors to give information about patients of theirs who had had reactive serologic tests for syphilis, and in April, 1949, it began tabulating the results

of those inquiries. The program now is the source of data on approximately 43 per cent of the cases that are known to the Department.

Listings of all reactive blood specimens submitted to the State Hygienic Laboratory are sent to the Venereal Disease Division of the State Department of Health. If a morbidity report bearing the patient's diagnosis is not received within 30 days from the date of the serologic test, a form letter is sent to the physician who submitted the specimen, requesting information about the diagnostic observation and asking for a morbidity report if the diagnosis of syphilis has been established. If no answer has been received after another 30 days, epidemiologic reports on the suspects are prepared and sent to appropriate investigating agencies for further follow-up.

During the past eight years (actually 84 months), (1) an average of 267.1 inquiries per month have been sent to physicians; (2) an average of 185.3 replies (69.4 per cent of inquiries) have been received per month; (3) an average of 57.8 syphilis cases per month have been reported by this means; and (4) these reports represent 43.2 per cent of the syphilis cases reported from all sources each month, and account for 60.6 per cent of all syphilis cases reported by private physicians.

In the six-year period (fiscal years 1951-1956, inclusive), from 36.2 to 44.3 per cent of the total syphilis cases in the United States were reported by private physicians, and 14.1 to 16.7 per cent of the total gonorrhea cases. In Iowa during the same six-year period, private physicians reported an average of 71.3 per cent of the total syphilis cases and 53.4 per cent of gonorrhea cases.

RESULTS OF PRIVATE PHYSICIAN SOLICITATION PROGRAM
1949-1956 (84 Months)

	1949	*1950*	*1951*	*1952*	*1953*	*1954*	*1955*	*1956*	*Total*	*Avg./Mo.*
Letters Sent	3875	4166	3066	1385	3311	2757	2316	1563	22,439	267.1
Letters Answered	2431	2797	2094	923	2435	2056	1609	1224	15,569	185.3
Per Cent Answered	62.7	67.1	68.3	66.6	73.5	74.6	69.5	78.3	69.4	69.4
Syphilis Cases Reported	800	777	583	252	777	712	532	426	4,859	57.8
Total Syphilis for Period	1672	1954	1424	937	1834	1524	1098	807	11,250	133.9
Per Cent Syphilis From Letters	47.8	39.8	40.9	26.9	42.4	46.7	48.5	55.7	43.2	43.2
Months Project Operated	9	12	10	9	12	12	12	8	84	

RESULTS OF PRIVATE PHYSICIAN SOLICITATION PROGRAM
1951-1956 (57 Months)

	1951	*1952*	*1953*	*1954*	*1955*	*1956*	*Total*	*Avg./Mo.*
Letters Sent	1077	1385	3311	2757	2316	1563	12,409	217.7
Letters Answered	761	923	2435	2056	1609	1224	9,008	158.0
Per Cent Answered	70.7	66.6	73.5	74.6	69.5	78.3	72.6	72.6
Syphilis Cases Reported From Letters	224	252	777	712	532	426	2,923	51.3
Total Syphilis for Period	523	937	1834	1524	1098	807	6,723	117.9
Per Cent Syphilis From Letters	42.8	26.9	42.4	46.7	48.5	52.8	43.5	43.5
Months Project Operated	4	9	12	12	12	8	57	

EREAKDOWN OF LETTERS RETURNED WITH DISPOSITIONS OTHER THAN INFECTED
1951-1956 (57 Months)

	1951	*1952*	*1953*	*1954*	*1955*	*1956*	*Total*	*Avg./Mo.*
Not Infected	291	464	1203	1055	784	518	4,315	75.7
Previously Reported	40	35	103	55	33	79	345	6.1
Patient Failed to Return	119	106	212	100	130	134	801	14.1
Patient Unknown to Physician	18	24	35	47	40	14	178	3.1
Under Observation	61	30	92	71	63	35	352	6.2
Deceased	8	12	13	16	27	18	94	1.6
Totals	537	671	1658	1344	1007	798	6,085	106.8
Months Project Operated	4	9	12	12	12		57	

PERCENTAGE DISTRIBUTION OF ALL LETTERS RETURNED BY DISPOSITIONS, FOR TOTAL STUDY PERIOD
1951-1956 (57 Months)

Disposition	*Total for Period*	*Monthly Average*	*Percentage*
Infected (Morbidity Enclosed)	2,923	51.3	32.5
Not Infected	4,315	75.7	47.9
Previously Reported	345	6.1	3.8
Patient Failed to Return	801	14.1	8.9
Patient Unknown to Physician	178	3.1	2.0
Under Observation	352	6.2	3.9
Deceased	94	1.6	1.0
Total Letters Returned	9,008	158.0	100.0

Iowa Maternal Mortality, 1953-1954

Cases Edited and Summarized by the Maternal Mortality Reviewing Board

SYSTEMIC DISEASE

CASE NO. 92

In this patient (age 23; para 1; myelogenous leukemia) a diagnosis of myelogenous leukemia had been made four years earlier, at the time of the first delivery. The prenatal course had been adequately supervised and was uneventful until the middle of the seventh month, when the patient went into spontaneous labor accompanied by rather severe vaginal bleeding. After consultation, a diagnosis of abruptio placentae was made, and delivery was done by cesarean section. The infant weighed about 1,830 Gm., and survived.

The condition of the patient after delivery was fair, and the prognosis was guarded. She was given close attendance and adequate blood replacement, but she expired within nine hours.

This death was related to pregnancy, but it was non-preventable. Because of leukemia, the patient was unable to withstand blood loss from abruptio placentae.

Question: Had termination of this pregnancy been considered?

CASE NO. 56

This patient (age 25; para 2; thrombocytopenic purpura) had a well supervised pregnancy, and delivery was normal except that the placenta was expressed with difficulty. She was dismissed from the hospital on her sixth postpartum day.

Vaginal bleeding continued, and a month postpartum she was readmitted for curettement. Considerable placental tissue was removed from the uterus. The patient continued to bleed, ran some fever and vomited coffee-ground material. During the next 10 days, she received 10 units of whole blood. She was then transferred to a larger hospital.

Upon admission, she had an elevation of temperature and pulse rate. The abdomen was soft. She was passing blood from the vagina and had generalized purpuric spots and ecchymosis. She was given multiple transfusions (74 units) with fibrinogen and cortisone. A second curettage was done, and some fragments of fibrotic placental and decidual tissue were removed. When her condition failed to improve, her spleen was removed, and she was given x-ray irradiation. In spite of all these procedures, the patient continued to bleed and ran a downhill course. She died of pneumonia two months after delivery.

This death was related to pregnancy, but it was non-preventable.

It was never determined what was destroying her platelets. The attending staff was disappointed that she did not respond to splenectomy, but today there is considerable uncertainty about whether or not that procedure is best. (See Dameshek, W., and Stefanini, M.: Idiopathic thrombocytopenic purpura. M. Clin. North America, 37:1395-1407, 1953; abs. Mod. Med., 22:102-103, (Jan. 15) 1954.)

Questions: Could something in the uterus have been acting as an antigen which continued to immunize the patient? If so, provided that the patient could have withstood a second surgical procedure, would a hysterectomy have been indicated?

CASE NO. 62

This patient (age 34; para 2; diabetes) was a known diabetic, and her second baby had been delivered by elective cesarean section because of the diabetes. During her prenatal period, her urine occasionally had shown sugar, and in her seventh month, her blood sugar was 178 mg. per cent. She received 20 units of protamine zinc insulin daily. Her weight gain was 26 pounds. Her physician had planned on an elective section about two weeks prior to her due date.

One month before term, she was brought into the hospital in shock, with 3+ sugar in the urine and a blood sugar of 249 mg. per cent. At the onset of those symptoms, the patient had severe upper abdominal pain. She showed no evidence of bleeding. She was given insulin, Levophed, adrenal cortex, ACTH, stimulants and whole blood in an attempt to combat the shock. Death occurred seven hours after admission, and a postmortem section was done, but the 4,200 Gm. fetus had been dead for several hours. At the time of the section, a superficial examination of the abdominal contents revealed no gross abnormality.

This death was related to pregnancy, but it was non-preventable. Acute pancreatitis is more possible in a diabetic patient than in a normal one, and could have produced this clinical picture. Often the damage done by an acute pancreatitis is entirely retroperitoneal, and retroperitoneal damage would explain the absence of any suggestive changes in the peritoneal cavity at the time of the postmortem cesarean section.

The shock could not be attributed to hemorrhage, for there was no history of bleeding, nor could it be attributed to insulin shock, for the blood sugars were above normal.

Questions: From the weight of the baby, it is possible that the patient was closer to term than had been estimated, and had the size of the baby

been established, the delivery might have been accomplished earlier.

CASE NO. 98

This patient (age 22; para 1; diabetes) had been a diabetic for more than 10 years, taking 40 units of NPH and 30 units of regular insulin per day. During her first trimester, she showed 1 to 4+ sugar in her urine. About the middle of her fourth month, she developed symptoms of an acute appendicitis, and was admitted to a hospital for an appendectomy. During the surgery, the patient received 250 cc. of Ringer's solution containing 30 units of NPH insulin, and after surgery she received 1,000 cc. of 5 per cent glucose. About three hours after the surgery, her respirations became labored, and her skin was cold, clammy and pale. She became unresponsive. The physician removed some mucous material from her upper respiratory tract, and following an infusion of glucose, she seemed to improve. About three hours later, she had another episode, at which time her blood sugar was 390 mg. per cent. She did not respond to treatment, and died. No autopsy was obtained. A pathologist's report on the operative specimen was negative.

This death was related to pregnancy, but it was non-preventable. It was felt that the patient did have an acute appendicitis in spite of the pathologist's report, because of the localization of pain, temperature, and increased white count, associated with repeated vomiting. Her diabetic condition had apparently been unstable throughout the pregnancy.

The question of postoperative hypoglycemia must be considered. If the patient had received her usual dose of NPH insulin, it would have been at the peak of its action at the time of surgery. At the operation, she received 30 more units of NPH insulin which would begin to act in about two hours, or at the time she had her first postoperative episode. It was felt that it was not wise to use NPH insulin during a surgical procedure, when a patient is likely to be in and out of control. The terminal blood sugar was meaningless, since the patient had recently received intravenous dextrose.

CASE NO. 74

This patient (age 35; para 4; meningitis) had attempted to produce an abortion upon herself, and when she first reported for prenatal care in the fifth month of her pregnancy, there were cervical lacerations, and infection was evident. She was quite insistent that an abortion be produced.

The patient went into spontaneous labor about three weeks before the estimated date of her confinement, and delivered a 2,600 Gm. live baby after a relatively short labor. She was dismissed on her third postpartum day.

Forty-eight hours later, she began to have severe pain in her head, and she was readmitted. Her face, hands and feet were swollen, but she had no temperature. The pain required narcotics, and diuretics seemed to relieve the edema. She apparently improved for four or five days, but then began to have an increase in temperature. Her neck muscles became rigid, and she was confused mentally. She then had a severe convulsion. An examination then established the diagnosis of meningitis. The vaginal discharge became foul. The patient did not respond to treatment, and died on the twelfth postpartum day.

This death was related to pregnancy, but it was not preventable.

CASE NO. 79

This patient (age 26; para 3; pneumonia) had a history of always being uncooperative with the doctors. One of her pregnancies had ended in an abortion which apparently had been self-induced. Throughout her final pregnancy, she had been deeply resentful toward her husband and the doctor, and had not cooperated satisfactorily. She had made her first prenatal visit in her fourth month, at which time she complained of vomiting. A week later, her vomiting became so severe that she was admitted to the hospital.

Upon admission, she was very apprehensive and hysterical. Twenty-four hours later, she was much improved and was sent home. A month later she was readmitted in a hysterical condition with severe vomiting. At this time she was dehydrated and required intravenous glucose and sedation. She recovered promptly.

The next month when she visited the doctor's office, she had a severe respiratory infection, and it was treated. She returned to the doctor's office about three weeks later with no complaints other than a cough. Twelve days later, her husband brought her to the hospital, saying that she had been in bed most of the time since her last visit to the doctor, but that neither he nor she had felt it necessary to call for medical assistance.

At the time of this admission, the patient was extremely ill, cyanotic and dyspneic, and had a productive bloody sputum. Diagnosis was made of a diffuse pneumonitis, and the patient was treated with oxygen, penicillin and whole blood. She did not respond, and died three days later. At the time of her death, she was about seven months pregnant, but no postmortem section was considered because of the patient's extreme cyanosis and because no fetal heart tones had been heard. Autopsy confirmed the diagnosis of a bilateral pneumonia.

This death was related to pregnancy, but it was not preventable. The patient had had inadequate prenatal care, largely as a result of her own attitude. However, it should be emphasized that any patient who has considerable vomiting in pregnancy may well have a drop in hemoglobin sufficient to cause trouble. When a patient has prolonged episodes of vomiting, the blood count should be carefully evaluated. This patient had a poor mental attitude toward her pregnancy, and since that fact was recognized, perhaps she should have been referred for psychiatric aid.

CASE NO. 90

Although this patient (age 31; para 2; pneumonia) had not reported for prenatal care until the fourth month of her pregnancy, she had been seen regularly from then until the onset of her labor.

She was known to have polycystic kidneys, but her urine remained negative. No other untoward symptoms were ever noted. She went into spontaneous labor about one month before the date of her expected confinement, and was delivered of a 2,500 Gm. live infant by low forceps. Nupercaine 2.5 mg. was used for spinal anesthesia.

One half hour after delivery, the patient complained of a headache and was given codeine grs. ½. She began to vomit, did not respond well, showed an elevated temperature and had labored breathing. Supportive treatment was instituted, and medical and obstetrical consultants were called. A spinal tap was done. The fluid was not under pressure, but it was cloudy with white blood cells. A diagnosis of meningitis was made, and antibiotics were given in massive doses.

The patient lived for six days, but remained comatose and had labored respirations. Her condition deteriorated steadily.

Autopsy revealed a bilateral bronchopneumonia. There were some small, localized areas of hemorrhage throughout the cortex, thalamus and pons. There was no evidence of meningitis.

This death was related to pregnancy, and no definite opinion could be made as to whether or not it was preventable.

The death certificate stated that death was due to cerebral hemorrhage. In view of the autopsy findings, it was recommended that it be amended.

The discussion of this case brought out the possibility that the death may have been associated with spinal anesthesia. There has been considerable discussion about the use of Nupercaine for obstetric anesthesia, and it was felt that the dosage in this instance was too heavy for obstetric needs.

CASE NO. 88

This patient (age 22; para 2; infectious hepatitis) had been seen by her family physician during the third month of pregnancy, at which time jaundice was observed. Earlier, she had complained of lassitude and drowsiness, but had had no fever or pain. She apparently had had no treatment for the jaundice, and after it had persisted for at least four weeks, she became disoriented and semi-comatose.

She was then admitted to the hospital. She did not respond to questioning, although she responded to pain stimuli. She had some edema of the face, hands and feet, and the skin and the sclera of her eyes were icteric. Her reflexes were generally reduced. She had a temperature of 99° F., and a pulse of 120 beats per minute. Her urine contained no albumin or sugar, but did contain a considerable amount of bile. Her hemoglobin was 8.5 Gm., her white blood cell count was 13,600, and her hematocrit was 31 per cent. Her blood pressure was 115/75 mm. Hg. She had a CO_2 combining power of 17.8, and liver function tests showed a reduction of function of the liver. She had a plasma protein of 6.79, with a reversal of the A-G ratio. Her uterus was enlarged to the size of a four or five months' pregnancy, and the liver was not palpable. A diagnosis was made of acute infectious hepatitis, and supportive treatment was instituted. Three days after her admission, she aborted spontaneously, and she died on the following day. Autopsy revealed an acute yellow atrophy of the liver, with massive necrosis, some terminal pneumonia and degeneration of the renal tubules.

This death was related to the pregnancy, and it was felt that it was not preventable.

There was some question as to whether or not this patient had had adequate prenatal care. It is doubted that the infectious hepatitis could have been controlled, but if it had been properly treated when first discovered, her subsequent course might have been different.

SEPSIS

CASE NO. 64

This patient (age 31; para 4; puerperal phlebitis) had a well supervised, uneventful pregnancy and labor. Although ambulatory, she stayed in the hospital nine days to assure herself of accomplishing breast feeding. Following dismissal, she developed some swelling of the left leg and was returned to the hospital. The patient had a low grade fever and very little pain. All her symptoms disappeared in eight days, and she was allowed up. Within five minutes, she had an embolism and died.

This death was related to pregnancy, but it was non-preventable.

The physician criticized himself for not using anticoagulants. It was felt that such drugs were not indicated, and their value was questioned. *Reference:* Ochsner, A.: Thrombophlebitis and phlebothrombosis. M. Clin. North America, pp. 1113-1118, (July) 1953.

CASE NO. 59

This patient (age 40; para 5; peritonitis) was a known diabetic. She reported early for prenatal care. By the eighth month, she had gained 34 pounds, and had albumin and white and red cells in her urine. She was admitted to the hospital about three weeks before her due date for induction because of her diabetic condition. Induction was accomplished with repeated doses of pituitrin totaling 26 minims and amniotomy. After 9½ hours of first-stage labor, a live baby weighing 6,000 Gm. was delivered by low forceps. On the following day, the patient began to develop abdominal distention. It was thought that she was developing insulin shock. She was treated with intravenous glucose, Prostigmin, Wangensteen suction and antibiotics.

On the fifth postpartum day, she was transferred to a larger hospital and prepared for exploratory surgery with plasmoid and whole blood. After con-

sultation, the abdomen was opened. A rupture of the cecum was found near an old appendectomy scar, with ileus and generalized peritonitis. The patient's condition deteriorated in spite of supportive treatment, and she expired on the ninth postpartum day.

This death was related to pregnancy, and the preventability was questionable.

Discussion centered around the type of induction. If the cervix was favorable, simple amniotomy would have been sufficient. If medical induction was indicated, pitocin would have been the oxytocic of choice. A total of 26 minims of pituitrin seemed to be quite large.

It was not clear from the protocol as to why the cecum ruptured.

It seemed rather soon after delivery for a peritonitis to develop as a result of any occurrence during the delivery.

Question: Had an attempt been made to keep this woman, a 40-year-old diabetic with four living children, from becoming pregnant?

CASE NO. 70

This patient (age 40; para 2; peritonitis) had an uneventful pregnancy. Twin pregnancy was diagnosed in the seventh month. About a week before the expected date of her confinement, an elective section was done because the first twin presented by brow (confirmed by x-ray). Under cyclopropane anesthesia, a classical section was done, followed by double salpingectomy. Two thousand cubic centimeters of intravenous glucose was given. Pituitrin and ergotrate were injected into the fundus.

The patient was mentally confused for 48 hours. For the first three days, her temperature was normal, but she had some soft distention, relieved by enemas. During the three days, the patient received 7,000 cc. of 5 per cent glucose in water and 3,000 cc. of glucose in saline. Wangensteen suction was again introduced, and in the next two days the patient received 11,000 cc. of glucose and 1,000 cc. of whole blood. She was also given antibiotics, Prostigmin and adrenal cortex. The patient appeared to be improving during the first week, but her condition deteriorated, and she died on the ninth postoperative day.

This death was related to pregnancy, and it was preventable.

The wisdom of doing a cesarean section without a trial of labor was questioned. A brow presentation is usually transitory and converts to a vertex or face presentation.

Following surgery, the patient developed symptoms of a low-grade peritonitis, but later symptoms were suggestive of an electrolyte imbalance which can develop following prolonged use of Wangensteen and large amounts of intravenous fluids.

Although pituitrin had no effect on the outcome of this case, it is considered by many physicians to be contraindicated following cyclopropane anesthesia.

CASE NO. 77

This patient (age 29; para 1; peritonitis) had an uneventful, well supervised pregnancy. Ten days before the expected date of her confinement, she began to have abdominal pain accompanied by vomiting. She was hospitalized, and adequate consultation was held. Upon examination, it was found that her uterus was markedly enlarged, tense and tender. The cervix was effaced and dilated five or six centimeters, with the result that the membranes were ruptured. Spontaneous delivery of the child and the placenta occurred half an hour later.

Nevertheless, the original symptoms persisted. The patient was given fluid and sedation, and a Wangensteen tube was introduced. The following day, the symptoms were more severe. An intestinal obstruction was suspected. The white blood cell count was 33,700. An upright x-ray of the abdomen showed no evidence of obstruction. Supportive treatment was continued. The patient felt better, and her temperature and white count dropped. On the fifth day, the symptoms again increased. An x-ray now revealed a questionable obstruction. The patient was opened, and a volvulus was found at the site of an old appendectomy, with 10 cm. of intestinal gangrene. This was removed. There was a generalized peritonitis. The patient died 11 hours postoperatively.

This death was related to pregnancy, and it was preventable.

The symptoms found in this patient pointed to an obstruction, even though laboratory findings were not conclusive. Continuation of pain and prolonged vomiting in a woman near to term should warrant more timely intervention.

CASE NO. 111

This patient (age 31; para 3; peritonitis) was seen only twice in her prenatal period, the first visit being in the seventh month. She asked for a cesarean section and sterilization, and those procedures were done 14 days before the expected date of her confinement.

On the third postoperative day, she began to develop signs of peritonitis, distention, pain and labored breathing. She was given fluids and antibiotics. Consultation was called on the sixth day shortly before death occurred.

This death was related to pregnancy, and it was preventable.

There was no indication for a cesarean section in this case. The hospital staff should be criticized for not having more stringent rules about consultation and indications for both cesarean sections and sterilization.

CASE NO. 51

This patient (age 26; para 4; sepsis, not puerperal) did not report for prenatal care until the middle of her seventh month of pregnancy. The

patient was normal except for a history of having had a severe attack of "flu" at the end of the second month of her pregnancy, which resulted in a weight loss of 10 pounds.

At the eighth month, the patient had a chill, followed by a temperature of 102° F. and labor pains. She went into an unlicensed maternity home and was given penicillin and aspirin. Six hours later, she delivered a macerated fetus weighing 1,500 Gm. There was no hemorrhage, but the patient went into immediate shock and was transferred to a hospital. Complete examination failed to reveal the cause of infection. The patient was given whole blood, oxygen, cortisone and Methedrine. She died on the following day. Autopsy diagnosis: Waterhouse-Friderichsen syndrome from an overwhelming infection of undetermined cause.

This death was related to pregnancy, and it was non-preventable.

CASE NO. 63

The first four pregnancies of this patient (age 31; para 7; septicemia) had been uneventful, terminating in spontaneous full-term deliveries. The fifth infant delivered prematurely, and the sixth by version and extraction because of a persistent shoulder presentation. The last pregnancy was terminated by curettement, with a diagnosis of hydatid mole.

It was thought that the patient's membranes ruptured about the date of expected confinement. When no labor ensued, 12 minims of pitocin were given in 2-minim doses. A few days later, obstetric consultation was held, and an external version was done to correct a floating breech. Again pitocin was given, but no contractions were elicited. Prophylactic antibiotics were given during this treatment.

A week later, the patient was again given pitocin, and this time went into labor. During labor, she had a severe, generalized chill and was given 100 mg. of Demerol and penicillin. The patient delivered a stillborn infant weighing 2,200 Gm. spontaneously with nitrous oxide anesthesia. The placenta delivered immediately, with a total blood loss of less than 200 cc.

Thirty minutes after delivery, the patient went into profound shock, and her temperature became elevated, reaching 105° F. within the next two hours. Obstetric consultation was called. The patient was given plasma and whole blood. There was no evidence of bleeding. Eight hours after delivery, there was considerable vaginal bleeding, but the fundus was firm. More whole blood, antibiotics, saline, cortisone and stimulants were given, but the patient failed to respond and died 18 hours after delivery.

This death was related to pregnancy, and it was preventable.

Discussion centered around the actual need for induction. If membranes had ruptured, the patient could have been allowed to continue until labor started, with antibiotic prophylaxis. If it had been necessary to stimulate labor, pitocin in smaller doses would have been preferable.

Question: Were the membranes actually ruptured? There must have been considerable fluid in the uterus to have permitted an external version.

CASE NO. 45

This patient (age 28; para 0; pyelitis and pyelonephrosis) had a skin condition which had been diagnosed as scleroderma before pregnancy. She did not report for prenatal care until her fifth month. Then, she had typical signs and symptoms of appendicitis, and an appendectomy was done. The pathologist's report was negative. The urine at that time showed 50 white blood cells per high-power field, and some red blood cells. She did not see her physician after discharge from the hospital until she had reached her seventh month. At that time there were no abnormal findings.

The patient went into spontaneous labor 30 days before her expected date of confinement. Upon admission to the hospital, she had 50 white blood cells per high-power field, 20 red blood cells per high-power field and some casts in the urine. She had a mild anemia, with a hematocrit of 40. She had some edema, but it was hard to evaluate because of the scleroderma. Her blood pressure remained normal. During labor, the patient had 10 convulsive seizures, and she was given Demerol, Verenteral, 50 per cent magnesium sulfate, luminol, Vereflex and intravenous glucose. She delivered a 1,500 Gm. infant spontaneously.

Following delivery, daily catheterized urine specimens continued to show white and red blood cells and casts. Heavy vaginal bleeding started on the tenth postpartum day, and a curettement was done and repeated transfusions were given. Red cell counts ranged from 2.2 to 2.8 million, with hemoglobin 6.4 to 8.7 Gm. After transfusions, the NPN on the twenty-seventh postpartum day was 48 mg. per cent, and it went much higher before death. Repeated blood cultures were negative. Death occurred on the sixteenth postpartum day.

This death was related to pregnancy. It was not preventable.

Scleroderma, being a collagen disease, produces renal disturbances and often abdominal pain. It is felt that a more nearly complete evaluation should have been made following the appendectomy. The patient probably had a pyelitis or a pyelonephrosis at that time. Nephrosis is frequently the immediate cause of death in scleroderma.

CASE NO. 61

This patient (age 38; para 3; pyelitis and pyelonephritis) had been a diabetic for 15 years, with a peripheral neuropathy for the past 11 years. She had had three deliveries 16, 15 and 12 years earlier, with babies weighing 4,000, 7,000 and 4,500 Gm.

The patient had gone from one physician to another. In her fifth month she was referred for an obstetric consultation. At that time, her diabetes

was controlled, but she had a paralysis of both lower extremities as a result of an old transverse myelitis. Her heart was enlarged, there was a systolic murmur and her blood pressure was 165/100 mm. Hg. Her urine contained 3+ albumin.

Immediate hospitalization was recommended, but the patient refused until two months later. Upon admission, her blood pressure was 170/100 mm. Hg. Her urine contained albumin, but no sugar. A diagnosis was made of a 28-week pregnancy complicated by diabetes, pyelonephritis and possibly a preeclampsia superimposed upon chronic vascular disease. She had a Grade IV diabetic retinopathy. She was put on diabetic management. Two days later, she developed acute glaucoma necessitating surgery.

After two weeks' hospitalization, the patient went into spontaneous labor and delivered a 1,000 Gm. infant under local anesthesia. The estimated blood loss was 400 cc. There was some bleeding following delivery, and four units of whole blood were given. The platelet count was 92,000, and it was felt that most of her bleeding was due to an internal condition rather than to a loss from blood vessels.

She became febrile on her third postpartum day, and uremia began to develop. She did not respond to treatment and died on the eleventh postpartum day. Autopsy revealed multiple abscesses in the kidneys and a necrotizing papillitis.

This death was related to pregnancy, but it was not preventable. This patient had been in very poor condition before pregnancy occurred, and was uncooperative in following medical advice.

CASE NO. 89

This patient (age 24; para 0; pyelitis and pyelonephritis) had a congenital malformation of the bladder, with urethral transplants at 12 years of age. She had always had a high NPN at intervals, but her condition remained satisfactory until the termination of her first pregnancy, which was uneventful. Two weeks after delivery, she had upper left abdominal pain and was readmitted to the hospital. In spite of adequate treatment and consultation, her condition deteriorated, and she expired three weeks after delivery.

This death was related to pregnancy, and it was not preventable.

There was considerable discussion regarding the classification of this death. It is true that the patient had a chronic condition which eventually caused her death. However, the pregnancy definitely accelerated the deterioration and was at least responsible for aggravating her condition. There were no obstetric implications in this death.

Question: Should a pregnancy have been allowed, or allowed to continue, in this case?

CASE NO. 34

This patient (age 19; gravida 4; puerperal embolism) had had two previous abortions, the first followed by a profuse hemorrhage. She was admitted to the hospital in the middle of the third month of pregnancy with symptoms of threatened abortion.

Following treatment, the patient's condition improved, and she went home a week later. Six weeks afterward, she had another episode of vaginal bleeding, and was hospitalized for a few days. Twenty-four hours after her dismissal, she had a sudden hemorrhage, following which she expelled a macerated fetus weighing 140 Gm. and an intact placenta. She did not return to the hospital until the following day. The physical findings were negative, but the patient was unresponsive. Consultation was held. The patient suddenly became cyanotic and restless, and died.

This death was related to pregnancy, but it was not preventable.

The physician certified this death as having been caused by a cerebral embolism. Anatomically, a cerebral embolism would not have been possible. The patient probably had a pelvic thrombophlebitis, with a pulmonary embolism.

CASE NO. 38

This patient (age 22; para 2; puerperal embolism) had a negative past history and a normal pregnancy until the middle of her seventh month, when she developed an acute sinusitis.

She was hospitalized, consultation was called and a diagnosis was made of meningococcus meningitis. She had adequate treatment, and apparently was responding. She went into spontaneous labor and delivered a stillborn infant. On her third postpartum day, she developed classical signs of a pulmonary embolus and died. The diagnosis was confirmed by autopsy.

This death was related to pregnancy, but it was not preventable. The fact that this patient was pregnant increased her likelihood of having an embolism. Ordinarily, pulmonary emboli are not seen in meningitis. Although there were no obstetric implications, this will have to be classified as a death related to pregnancy.

CASE NO. 52

This patient (age 27; para 0; puerperal embolism) had a negative history, except for a wheat allergy which had previously given her some trouble. The present pregnancy, labor and delivery were normal.

On the fourth postpartum day, the patient complained of pain in the left groin and leg, and within an hour collapsed and died. Autopsy revealed a thrombus in the left ileo-lumbar vein, extending into the iliac vein. A pulmonary embolism was demonstrated.

This death was related to pregnancy, but it was not preventable. Embolism occurred a little earlier than usual in this case.

Question: Could this patient have had a thrombosis before delivery?

Woman's Auxiliary News

TIME MARCHES ON!

It seems only natural that my last personal message as president of the State Auxiliary—one that I hope will reach all Iowa doctors' wives—is one that means a great deal to me. One often hears the phrase "Your home away from home." Have you ever thought of it in connection with the Iowa State Medical Society's office building in Des Moines? It is a place where you are always welcome, where you *belong,* where you can get help and information, and where, when you are tired and discouraged, you can be sure of getting a boost for your morale.

During the past four years, I have been meeting many of you at our state office. We come in the back or the front door at all hours, alone or with our husbands, and always we are welcomed with genuine friendliness. There have been constant office changes. New partitions have been built; new desks have been brought in; new faces have appeared; and new departments have been created. Now, it seems, there is no unoccupied space anywhere. But despite the growth and the consequent crowdedness, and no matter how busy the office has become, everyone greets you with true friendliness. You do not feel pushed or hurried, and no matter how trivial your needs, they are treated with respect and friendly courtesy. You need have come but once to be greeted upon your return as one of the most respected members of the medical family. Have you gone back to a reunion or a homecoming and felt that you were a stranger—that you no longer belonged? You will feel nothing of the sort at the state office. There we always belong. It is home base.

Many of you, I know, have shared my experience, but for those of you who have not, let me suggest that the next time you are in Des Moines you should visit the office of the State Medical Society. One comes to feel that the staff members regard their service to the medical profession as a privilege, rather than just as a job, and that they thoroughly enjoy it. I have never worked with a more dedicated or loyal group of people, and Iowa doctors can be proud of them.

At the office of the State Medical Society, committee meetings, programs and conferences are arranged for, even to the making of reservations and the serving of food. There, one of the finest state medical journals in the country is edited. Our husbands can obtain films, speakers, copies of medical reports, or helpful suggestions and advice. In fact, I dare you to think of a service that the personnel of our state office is not prepared to render either to your husband or to you. Our husbands' state dues are a very small investment for the returns they can get. Let's familiarize ourselves with the services to Medicine that are available at the state office, so that we can make the most of them.

WITH GRATITUDE AND SINCERE APPRECIATION

As retiring president of the Woman's Auxiliary to the Iowa State Medical Society and on behalf of our officers and members, I wish to express our appreciation for the time and advice given to all of us this past year by Dr. Wendell Downing, president of the Iowa State Medical Society, and by Dr. Fred Sternagel, Dr. G. H. Scanlon and Dr. E. F. VanEpps, the members of our Advisory Council.

I am deeply indebted to Dr. F. C. Coleman and his fellow members of the State Society's Committee on Legislation, and to Mr. Robert Throckmorton for extending to Mrs. Chase and me the privilege of attending legislative meetings this year. She and I have received a vast amount of valuable information and have been profoundly impressed at discovering the amounts of time and energy that these men have so willingly given to the study of legislative proposals, so that Iowa could join the ranks of states seeking only wise and beneficial national and state laws in the fields of health and the practice of ethical medicine.

JANE KING
President

RECOGNITION

Medical societies are proud of their Auxiliaries. In Dr. Harold L. Brereton's deputy councilor's report, as much space was devoted to the activities of the Palo Alto County Auxiliary as was given to the work of the Medical Society. He said, "Mention should be made of our loyal group of Auxiliary members. At a meeting of the Auxiliary held in October, eight of the nine members were present. Activities engaged in during the year were as follows: (1) Members assisted the Clay County Auxiliary at the Clay County Fair in manning the handicapped sale booth. (2) Members assisted in the tri-immunizations and polio immunizations of school children. (3) The group contributed to the Nurses Loan Fund. (4) Mate-

rial was supplied to various speakers in the nurse recruiting program and in various school programs. (5) One member headed the "Register and Vote" campaign in Palo Alto County. (6) Two members are in charge of the health and hospitality programs of the P.T.A. in Emmetsburg."

SAFETY FIRST

To become a "defensive" driver, you will:

1. Adjust your speed to conditions, and avoid being boxed-in by traffic

2. Scan the road ahead, and concentrate not only on what is happening but on what may happen

3. Follow at a safe distance and be ready for sudden stops

4. Glance frequently in your rear-view mirror to see the traffic picture around and behind you

5. Keep a safe distance from parked cars on narrow streets

6. Watch for signs (someone sitting in the driver's seat, movement of the wheels, lights turned on or smoke coming from the exhaust) that may indicate that a parked car will shortly turn into the center of the street

7. Slow down at night or when visibility is obstructed or poor

8. Watch for pedestrians and other cars, even when you are traveling with a green light

9. Watch for children between intersections

10. Always signal your intention to stop or turn, and check to make sure that your signal has been seen and understood

11. Prepare for turns by getting into the proper lane in plenty of time

12. Stay in one lane as much as possible, and don't hog the road

13. When passing, be sure that the driver ahead knows you are going to pass, pass on the left, and don't cut back too sharply

14. Don't pass on hills, curves, intersections or other "no-passing" zones.

SAFETY IN STATE CENTER

By working with the mayor and town council of State Center, Mrs. Charles R. Sokol, president of the Marshall County Auxiliary, has succeeded in getting a stop sign installed at the town's principal school crossing. The town has employed a patrolman at $300 per month to patrol the streets, and particularly the school crossings, morning, noon and after school, and in addition, flashing signals and a four-way stop sign have been erected on the town's main street.

Mrs. Sokol says that providing safety for State Center school children took a great deal of hard work and many personal contacts, but that it was worth it.

NATIONAL AUXILIARY CONVENTION

In conjunction with the annual meeting of the AMA, the National Auxiliary Convention will be held at the Hotel Roosevelt, New York City, June 3-6, 1957. The principal event on the first day, Monday June 3, will be a tea and fashion show at the Tavern-on-the-Green, in Central Park. The presentation of state reports will begin on Tuesday, the program at the luncheon in honor of past presidents of the National Auxiliary will be highlighted by Dr. Howard Rusk's address, "Sick People in a Troubled World," and at night there will be a reception and ball in honor of the new president of the AMA at the Waldorf Astoria Hotel. On Wednesday, June 5, the presentation of state reports will be concluded, the president, the immediate past president and the general manager of the AMA will address the Auxiliary's luncheon meeting, and roundtable discussions will be held. The election of officers and the Annual Dinner will take place on Thursday, June 6.

Mrs. Lester R. Hegg, of Rock Valley, is a member of the National Auxiliary's Nominating Committee.

Members who wish to make room reservations at the Roosevelt should write direct to the Hotel, mentioning the Auxiliary so that their requests will receive special consideration. A list of other hotels and their rates can be found in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

COUNTY AUXILIARIES

Black Hawk

The six Future Nurses clubs sponsored by the Black Hawk County Auxiliary were entertained at a tea, on Saturday afternoon, April 27, at the Waterloo Elks Club. Mrs. J. L. Kestel and Mrs. T. F. Thornton are the FNC sponsors and co-chairmen of the Nurse Recruitment Committee. The clubs are very active, thanks to the interest of the sponsors.

Boone

The new officers of the Boone County Medical Auxiliary are Mrs. Ben T. Whitaker, president; Mrs. G. H. Sutton, vice-president; Mrs. John M. Wall, secretary; and Mrs. Louis R. Greco, treasurer.

Clay

On Thursday and Friday, March 21 and 22, the Future Nurses Club of Spencer High School visited the School of Nursing at the University of South Dakota. The girls were transported by bus to and

from S.D.U., and were housed in Notebloom Hall. On Friday, they had opportunities to tour the campus, to attend classes with freshman nursing students and to tour Dakota Hospital. Following their return to Spencer, the girls made reports of their trip in their Speech classes.

The new officers of the Clay County Auxiliary are Mrs. C. C. Jones, president; Mrs. Lyle F. Frink, vice-president; and Mrs. Ellis O. Schlichtemeier, secretary-treasurer.

Clinton

The Clinton County Auxiliary honored 40 doctors in recognition of Doctor's Day, March 30. Red carnations were sent to them. THE CLINTON HERALD took note of the occasion by sending a reporter to interview the two Life Members of the Clinton County Medical Society, Drs. Wilbur Walliker and Kurt Jaenicke, and by sending a photographer to take a picture of them. In the interview that the HERALD subsequently published, the doctors were quoted regarding the progress that has been made in medicine during their lifetimes.

Dallas-Guthrie

On March 21, following a luncheon at the Midway Cafe in Guthrie Center, the Dallas-Guthrie Medical Auxiliary held a business meeting at the home of Mrs. W. M. Thornburg, at which the president, Mrs. Donald Todd, presided.

A very informative talk was given by Mrs. F. B. Wilson, who is associated with the State Commission for the Blind. She explained the purpose and operation of the Eye Bank at SUI.

This group has the honor of belonging to the Exclusive Club, Group I, having achieved a rating of 143 per cent in securing subscriptions to TODAY'S HEALTH.

Emmet

The new officers of the Emmet County Auxiliary are Mrs. John L. Powers, president; and Mrs. Dale E. Dunn, secretary-treasurer. Both live in Estherville.

Grundy

During the summer of 1956, the officers of the Wellsburg Future Nurses Club planned their program for the year and made a yearbook for each of the 18 members. The program which they subsequently carried out included a panel discussion of requirements and opportunities in nursing, informative talks by a dietician and an anesthetist, two tours of local hospitals, a visit from a first-year nursing student and former member of the Club, and a tea for prospective members and their mothers. In addition to the formal program, the girls have passed trays at the County Hospital, have participated in two fund-raising drives, have sent four representatives to the Career Day held in Des Moines on November 2, and have given service hours in an effort to earn their individual Future Nurse pins. Those who have completed the requirements will receive their pins on Class Day. The sponsor of the group is Mrs. Lowell Peck.

In October, 1956, Dr. H. C. Merillat, of Des Moines, addressed the Grundy County Auxiliary and approximately 100 guests at the Grundy County Memorial Hospital on the subject of mental health.

In December, 1956, a number of Grundy County women met with Mrs. James Hendersen, president of the Iowa Association for Retarded Children, Inc., and Mrs. Barbara Emmerson, financial secretary, both of Cedar Falls, and visited the Castle Hill and Minot Schools for the mentally retarded in that city. Mrs. H. V. Kahler, of Reinbeck, and Mr. Schuhart, Superintendent of Schools in Dike, collected a number of toys, books and records for the nine children in the MRC school that Mrs. Fred Nickalus, of Parkersburg, conducts in Fern. A great deal is being done for those youngsters, and they are particularly delighted to have new chairs and desks just like those that other children have.

Marshall

Members of the Marshall County Auxiliary helped to organize the Marshall County Mental Health Association, and are now working to establish a mental health clinic. The Auxiliary's chairman for that project is Mrs. Earl Keyser. Membership of the Marshall County Auxiliary is now 26.

The new officers of the Marshall County Medical Auxiliary are Mrs. W. P. Marble, president; Mrs. John C. Garland, vice-president; Mrs. Rufus H. Kruse, secretary; and Mrs. Ralph C. Carpenter, treasurer. All of them live in Marshalltown.

Polk

The Auxiliary to the Polk County Medical Society met for coffee at the home of Mrs. Robert Upegraff on April 12. Mrs. Dwight Wirtz presided at the business meeting. Following the regular session, Mrs. Ralph Hines, convention chairman, led a discussion of plans for the annual meeting of the State Auxiliary.

Inexplicably, the WOMAN'S AUXILIARY NEWS for April contained the statement that the Polk County Auxiliary elected officers at its March meeting. The election was not held until April 12, and the new officers are Mrs. L. R. Pearlman, president; Mrs. J. T. Bakody, president-elect; Mrs. L. Goldberg, first vice-president; Mrs. F. E. Thornton, second vice-president; Mrs. L. O. Ely, recording secretary; Mrs. B. M. Merkel, corresponding sec-

retary; Mrs. R. E. Dyson, treasurer; and Mrs. R. A. Wheeler, auditor.

Sioux

About 30 girls of Sioux County who are interested in nursing as a profession attended the Future Nurses tea sponsored by the Sioux County Auxiliary on March 16 at the Sioux Center Community Hospital. The Sioux County Public Health Nurse, Mrs. Naoma Ide, and her guest nurse from SUI spoke to the girls on the various phases of nursing. They explained that a four-year course has been established at the University by means of which a girl can get a bachelor of science degree as well as an RN certificate. Also, they announced nursing students at SUI can now have summer vacations during training, if they wish. Two nursing films were shown, and the group toured the County Hospital. Mrs. A. Bushmer, of Orange City, was chairman of program for the event, and Mrs. C. D. Oelrich and Mrs. A. L. McGilvra, of Sioux Center, were local chairmen.

Mrs. VanEldik, president of the Auxiliary, read a letter from Mrs. Bruce Howar, secretary of the State Auxiliary's Loan Fund Committee, commending the Sioux County group's regular donation to the Fund.

At a short business meeting, the following officers were elected: Mrs. Lester Hegg, Rock Valley, president; Mrs. McGilvra, vice-president; and Mrs. D. Haggar, Hawarden, secretary-treasurer.

MILESTONES TO MARRIAGE

The Mental Health Committee's project of presenting the series of letters "Milestones to Marriage" to high school seniors has met with more enthusiasm from the students themselves than had been anticipated.

Very fine reports have been coming to the central office from the councilors in the schools and from the Auxiliary members who have been sponsoring and assisting with the pilot study. One doctor's wife writes that the copies she left at her local high school have become so "dog eared" that she *must* have a few more to finish the year. Superintendents in other schools have written to thank the Auxiliary for the interest its members have shown in the schools, and to say that they think "Milestones to Marriage" is meeting an important need of their young people.

The Woman's Auxiliary to the Iowa State Medical Society is deeply grateful to the Iowa Mental Health Authority for its excellent cooperation in this project, and in particular for its assistance in making 1,000 sets of the letters available to the young people of the state.

If you—as a member-at-large, a Mental Health chairman of a county Auxiliary, or a county president—are interested in sponsoring this project in your schools next fall, please do write for a copy so that you may have ample time to study it and to introduce it to the proper school authority in advance of the opening of school next fall.

FUTURE NURSES CLUBS

FNC is still a major project of county auxiliaries in all sections of the state. It is not too early to begin planning for the FNC fall convention. During the summer, you will be informed regarding plans for that meeting.

THE CHATTER BOX

The **Ed Johnsons**, of Waterloo, are enjoying the white, sandy beaches of Florida.

The **Mark Kuhns**, of Waterloo, are touring the Southwest.

Just returned from a trip through the South are the **Elmer A. Voriseks**, of Des Moines. They toured the Mississippi River delta country, where the orange blossoms are beautiful at this time of year, and they also drove through the Cajun country in Louisiana.

Word has arrived that the **Dick Cortons**, of Waterloo, are the proud parents of a new baby boy.

Dr. and Mrs. D. C. Sharp, of Dubuque, are vacationing in Miami, Florida.

The **Cecil Sieberts**, of Waterloo, report that Acapulco, Mexico, is wonderful.

'Bye for now. We'll be communicating with you again next month about this time.

WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

President—Mrs. Dean H. King, 301 E. 4th Street, Spencer
President-Elect—Mrs. J. F. Gerken, Waterloo
Secretary—Mrs. Robert P. Mason, 5818 Chamberlain Drive, Des Moines 12
Treasurer—Mrs. E. A. Vorisek, 6205 Woodland Rd., Des Moines 12
Editor of THE NEWS—Mrs. E. T. Burke, 601 S.W. 42nd Street, Des Moines 12
Asst. Editor of THE NEWS—Mrs. D. F. Crowley, Jr., 663 44th Street, Des Moines 12

Medical Care Costs

The President-elect's Address

FRED STERNAGEL, M.D.

WEST DES MOINES

This paper is intended to defend the thousands of physicians and their associates who are providing health care in accordance with the noblest traditions of Medicine, and not those very few who are inclined to exploit their trust.

I wish to discuss the upward spiral of medical care and the consequent costs. First, I want to point out that Medicine has made great forward strides in research and in the development of scientific apparatus and facilities. Hospitals have become great—and expensive—institutions for the diagnosis and treatment of illness. Private offices of physicians are equipped with elaborate instruments, and trained personnel are required for the operation of that apparatus.

MEDICAL CARE HAS EXPANDED

In the old days of the horse and buggy doctor, the physician had only his little black satchel filled with instruments and remedies, and he treated patients in their homes. To go to a hospital for anything less than a major operation was almost a disgrace.

The rapid growth and popular acceptance of preventive medicine is another factor that has increased the costs of medical care. People today spend more money to have their health checked when they are well, or for immunizations and sanitation, than they used to spend for medical care when they were sick.

There are three other important factors that have increased the need for medical services today, as compared with previous times.

1. Science has provided mankind with high-powered automobiles, with the result that people get out on the highways and knock themselves to pieces by running into each other or into anything else that may cross their paths. Injuries from accidents in automobiles, and in our factories which now employ more of our population than ever before, have created a new medical care problem.

2. Since the end of World War II, there has been a tremendous increase in the birth rate, and during that time the money spent for this purpose has doubled. This increase in demand has necessitated more medical service, especially in the fields of obstetrics and pediatrics.

3. America is becoming a country of old people. Together with better incomes and the greater relaxation, better nourishment and improved ways of living that they will buy, the improved health and medical services have kept people alive longer. More old people means more medical services. Older people today are more often hurt than killed by diseases that finished off their ancestors in middle age. Frequent bouts with chronic ailments, not to mention acute illnesses, call for a kind of medical care which our forefathers, on the average, did not live long enough to require. Americans today can boast that they are the first generation in history to live long enough to be able to "enjoy poor health!"

THE GENERAL PRICE RISE HASN'T BENEFITTED PHYSICIANS

These are the reasons why more medical services are required today than ever before in our history. Also, we have seen how improved facilities make possible better care and treatment, but add to the costs of medical care. Finally, we must take into consideration the insidious workings of inflation, which not only have increased the costs connected with the high living and rich foods that cause sickness, but also have added to the expense of treating that illness after it has occurred. The five-cent cigar and the nickel beer have gone, and the two-dollar doctor's call, payable in vegetables and eggs, has gone with them.

In order to give proper consideration to medical costs, we must first consider what share the physician receives of the total payments that are made for medical care; second, we must decide how much the American people are financially able to pay; and third, we must choose the best method for them to use in meeting those expenses.

First, we shall take up the question of how much physicians receive as remuneration for the work they do. Out of the total health-service bill, the physicians receive only about one-third. The largest part of the money that the American people spend for health goes for materials, facilities and services that are not a part of the private physician's own practice. Those costs are connected with the operation of institutions, laboratories, clinical diagnostic facilities and the like. Even if physicians worked for nothing, the cost of medical care today would be reduced only by one-third, and it would still be far beyond the costs of prewar days. Thus, the doctor's bill is only one small part of the accumulated costs for medical care.

THE DOCTOR REALLY EARNS HIS FEES

For his services, the average physician today earns a disposable income of about $13,000 a year, after income taxes. To prepare himself for earning this income, he made an investment of $20,000 in

his education. If we deduct the interest on this investment, the average doctor can be said to have a take-home pay of $12,000 for a year of strenuous effort, including night calls and Saturday and Sunday work.

To earn this income, which seems nominal when compared with the well-publicized incomes of top-flight salesmen, high-powered executives and other successful men, the doctor must work 60 hours a week, in contrast with the 40 hours which have come to be regarded as standard. In addition, he must do considerable charity work in various clinics, in health drives and for patients who need his services but either will not or cannot pay the bills which follow.

The figure of 60 hours does not sum up the work and inconvenience that the physician must endure, for he is constantly on call. The workman who is paid an hourly wage or the head of a million-dollar industrial empire goes home at the end of the day or week with the assurance that he can rest and relax, free from care and disturbances. No physician enjoys the same privilege. Thanks to the telephone, he is constantly available to every person in his community, and he does not have the services of a secretary to act as a buffer or to weed out the time-wasters and the people who are inclined to make unnecessary or impossible requests.

A famous story was once written about a man without a country. Someone should write a story about the modern doctor—a man without a place to hide! There is never a time when a physician can undertake to keep an appointment, social or otherwise. He cannot go home to rest or otherwise enjoy himself with any assurance that it will be possible for him to relax without interruption.

Calls come in at all hours. Some are necessary; many more are not. His most annoying task is that of trying to sift out the calls from people who really need help from the useless calls from thoughtless persons. Many a time, when the doctor is near exhaustion at the end of a busy day, or during the night, he is called to help a person who is seriously ill. It is not money but duty which provides the incentive for the doctor to answer a call under those circumstances.

Duty, love of Medicine and a deep sense of obligation to society and his fellow men drew the doctor to his vocation in the first place and inspire him to continue practicing his profession. These noble ideals and high principles are beginning to lose their charm and glamor, now that there is a threat of socialism, and young men, as a result, are seeking more profitable and less demanding fields of endeavor for their life work. As evidence of this trend, the number of applications for entry into medical schools is decreasing. In 1948 there were 24,000 applications for entrance to our medical schools; in 1956 there were 15,000. This decrease of 39 per cent shows that our brighter and better qualified young men are turning to fields other than Medicine, ones in which the pay is better, the hours of work shorter and the working conditions more agreeable. Any claim that doctors grow rich at their work is based on exceptional cases such as, for example, the men who are shrewd investors. Reliable and official government statistics show that the average doctor finds himself rewarded for a year's work with no more than $13,000.

AMERICANS CAN EASILY PAY FOR THE CARE THEY NEED

What I have said should dispose of the misconception that physicians' charges are unreasonable. Doctors gain an adequate though modest livelihood. Now, let us see whether Americans are prepared to pay the total costs of medical care. When I speak of paying the total costs of health care, I mean not only recompensing doctors for their professional services, but paying the other two-thirds of the bill—costs which include laboratory fees, hospitalization and the like.

America has enjoyed a long period of prosperity based on full employment, high pay scales, an expanding economy and good business. As a result, large sums of money are available to Americans for personal consumption expenditures, over and above such necessities as adequate housing, food and clothing. Billions of dollars are spent each year for those things which we classify as "personal services." Included in this group is the total cost of medical care, and this includes doctors' fees, hospital charges, drug bills, dentists' charges and the costs of many other professional services and materials. The total of all these costs represent 4.4 per cent of consumer expenditures, or slightly more than the share that we pay for alcoholic beverages, and considerably less than the share that we spend on recreation. Tobacco takes 2.1 per cent; personal care 1.3 per cent and jewelry 0.7 per cent. In a country where people have had so much and such good medical care from the moment of birth (and even before birth) until death, these charges appear to be moderate. In consideration of our high standard of living, Americans can well afford to pay two-thirds as much to keep themselves well, strong and free of pain as they pay for alcohol and tobacco.

THE DANGERS OF SOCIALISM

We have examined the medical care bill from all angles, and have found that physicians do not demand or obtain exorbitant fees and that Americans are well prepared financially to pay the costs of medical attention. Next we should try to determine the best way for them to meet those expenses. There are two approaches to consider. One is the existing method in which the individual who makes use of this care either pays the bill after the service has been rendered, or prepays it by means of plans offered by private insurance companies. The other approach is one that would involve government subsidy and having the government take

over and run the hospitals and the private practice of medicine. Neither method is completely adequate to our needs, but only the first of them offers an opportunity for the preservation of a free society and a progressive medical service for the people.

Many Americans have not learned how to budget their family incomes so as to allow sufficient funds for medical care. Others neglect buying adequate insurance to help pay these costs when they arise, although today nearly 70 per cent of our people have some form of voluntary health insurance. Because that 70 per cent—the provident ones—recognize that medical care is expensive and necessary, they make sure of being able to pay the costs when they are required to utilize the services of their doctors and hospitals.

America is a capitalistic country, and free enterprise and individual initiative are its traditions. The capitalist system can be preserved only if we maintain private institutions for medical care, strengthened by each individual's responsibility for paying his own way, with the assistance of adequate insurance programs.

The greatest danger to free enterprise and private medical practice is the excellence of medical care. This is a strange paradox. Like Mary Shelley's Frankenstein, Medicine has created a situation which threatens to destroy the foundations upon which it was built. This danger arises because, in America during the past decade, we have perfected Medicine to the extent that it is not excelled any place in the world. Everyone expects the very best whenever he is ill, but some people are unwilling to pay for such care. Instead, they prefer that someone else should pay the bill for them.

As an alternative to private medical practice and individual responsibility for paying bills, these people propose government-controlled medicine, or socialism. There are a great many objections to their proposals, but perhaps the most serious of them is that the nationalizing of medical care will foster a European "ism" that will lower the quality of medical service and destroy American democracy at the same time. The system of freedom, liberty and democracy cannot exist side-by-side with government operation of medical institutions and control of private physicians!

Other objections include the fact that under such a system there is no assurance that the present quality of research and improvement in medicine can be maintained. The increased demand for free medical service will exceed the supply. Our facilities will be overwhelmed, and a deterioration of our present standards will follow. Eventually, slipshod methods will encourage the growth of a black market in medical care.

AN EXAMPLE OF THE EVILS OF BUREAUCRACY

I can think of nothing more disastrous to American traditional government, to the morale of members of the medical profession, or to the quality of medical service, than government control or operation. We should be warned by the now classic example of what can easily happen under a budget-bound government bureaucracy. I refer to the high-handed and dictatorial action of Postmaster General Arthur E. Summerfield.

The Post Office has had a long and honorable tradition of service. The slogan "The Mail Will Go Through" has become an American tradition. It is like the famous slogan of the theatrical world "The Show Must Go On" or the code of the medical profession which requires that care must be given to everyone who needs it.

We have had impressed upon us that "Neither snow, nor rain, nor heat, nor gloom of night stays these couriers from the swift completion of their appointed rounds." Yet one man, placed in full charge of the Post Office Department in Washington, sat in a luxurious office and spoke a few words to his secretary which accomplished something that "neither snow, nor rain, nor heat, nor gloom of night" could do. Postmaster General Summerfield destroyed an honorable and long-standing American tradition when he stopped the mails in a strictly political maneuver, and much the same sort of thing could happen to health care if Medicine were federalized.

May God grant that the medical profession never is placed in such a position. The dangers of political control over private facilities have become so obvious that all right-thinking Americans should shun any further encroachments by government into fields of private enterprise—especially medical care!

IOWA-METHODIST ADDITION IS STARTED

Ground was broken on April 16 for construction of the new seven-story addition to Iowa-Methodist Hospital, Des Moines, that will house a unit for the comprehensive medical care and rehabilitation of aged and handicapped patients. Completion is scheduled for the spring of 1959. There will be room for 120 beds, and space for physical and occupational therapy, a speech and hearing clinic, psychological and vocational counseling, and social-service activities. The total cost of the wing will be approximately $2,750,000. It will be financed by a loan, a Hill-Burton (federal) appropriation, a grant from the Ford Foundation, a large anonymous gift, and by money that the Hospital has accumulated from other sources.

Members of the Medical Planning Committee of the staff of the Hospital include Drs. Alonzo Jenks, Jr., chairman; George E. Mountain; Joseph B. Priestley; Van C. Robinson; F. Eberle Thornton; and Homer E. Wichern. They are mapping out a concentrated and intensive program of rehabilitation which is to be instituted as soon as the new facilities have been completed.

Television "First" for ISMS

As a sequel to the annual meeting of the Iowa State Medical Society, in Des Moines on May 1, seven Des Moines physicians undertook to perform a heart operation before television cameras. The pictures not only were shown simultaneously to physicians and other health workers who had been invited to see them at the KRNT Theatre, three blocks away from the operating room, but also were shown virtually in their entirety to the general public over television station KRNT-TV—Des Moines.

LIFE magazine directed one of its photographers, who was on his way to Chicago to cover the Robinson-Fullmer fight, to go first to Des Moines so that it might have materials for a story on the first open-circuit television of heart surgery, and other nationally-circulated magazines and newspapers got the story, either from their own reporters or from the wire service accounts. Following is the substance of the account that appeared in the May 13 issue of NEWSWEEK:

"Two-year-old Mark Summers Scovel got a free operation last week—and television cameras nudged close to the operating table to see him gain a new life. He was rid, the surgeons believed, of almost surely fatal defects in his tiny body: (1) a dime-size hole in a chamber of his heart, between the two lower ventricles, and (2) an obstruction between the right ventricle and the artery leading to his lungs. The hole was causing the heart to leak, and the obstruction was closing off the artery.

"At Raymond Blank Memorial Hospital in Des Moines, Iowa, the team of doctors applied expert hands to young Mark; they had operated on five other children with the same defects (the same as those found in 'blue babies'), and four had survived. And Mark was lucky to have the doctors. The cost of the team's services was far beyond the pocketbook of Mark's father, Marvin Scovel, a warehouseman for a concrete company, but he was told there would be no charge if he permitted the operation to be televised as a professional and public service.

"So promptly at 1:30 p.m. . . . a TV camera focused on two-year-old Mark. . . . The TV crew, organized in a collaboration between the Des Moines station and the Iowa State Medical Society, had been rehearsed for three weeks for this one-shot show. Five crewmen were in the operating room during surgery, and every piece of their equipment had been scrubbed with the same foamy sterilizer that the doctors used on their hands. In addition to cameras and mirrors, three commentators helped the audience keep track of what was going on as little Mark, the preparatory surgery past, went on-camera with his chest opened and the intricate manipulation of his heart already beginning.

"It was a suspenseful moment for the doctors, William H. Myerly (surgeon in the case); Thomas D. Throckmorton; John Gustafson; Harold L. Klocksiem; Edward Duffy; William Stoll; and Harold Margulies. Until they opened the boy's chest, they were not absolutely sure that their diagnosis had been correct. There was, moreover, a '10 per cent chance,' according to Dr. Gustafson, that 'the boy might die before the cameras.'

"The cameras watched as the surgical team sewed a small plastic patch over the hole in Mark's heart and snipped away the arterial obstruction. Two hours and 40 minutes after he was wheeled into the operating room, the work was done. By then the KRNT cameras had swung away to focus cheerfully on two other children, a 6-year-old boy and his 12-year-old sister, healthy and happy after similar operations.

"Mark's mother, given a chance to see the operation, turned away. 'I couldn't stand it,' she said later, 'but I don't regret letting them televise it. I hope it helped a lot of people realize what a child goes through and what doctors can do.'

"Even the doctors felt, Dr. Gustafson said, that 'there was so much tension that I don't think we want to do it again.' But in their little TV real-life drama they had given a normal life expectancy to a child. Little Mark had entered the operating room with an expectancy of seven to ten years."

SYMPOSIUM ON PULMONARY DISEASES

The Sixth Annual Symposium for General Practitioners on Tuberculosis and Other Chronic Pulmonary Diseases will be held at Saranac Lake, New York, from July 8 to 12. It is approved for 26 hours of formal credit to members of the American Academy of General Practice.

Many doctors attending previous sessions brought their families with them to enjoy the surrounding Adirondack Mountains, and so that families may have the use of their family cars, free bus transportation will be provided to the various meeting places for the doctors attending the course. Excellent housing accommodations are available. The registration fee will be $40. For further information, address Dr. Henry W. Leetch, P.O. Box 11, Saranac Lake, New York.

Scientific Articles

The Extension of Radical Surgery in the Treatment of Cancer

With Comments on Cancer Therapy in General

The Arthur Erskine Memorial Lecture

GEORGE T. PACK, M.D.

NEW YORK CITY

CANCER IS ON the increase throughout the civilized world. When eight out of every 100 men and 11 out of every 100 women who reach the age of 35 years are destined to die of cancer, it is time for the medical profession to awaken to one of the greatest health hazards the world has ever known. The increased incidence of cancer is both relative and absolute. The average age of the population has risen, and the life expectancy of each individual is getting longer, so that more people live to the age when cancer is most likely to attack. Infants are being spared many of the hazards of birth; the infectious diseases of childhood are on the wane; the tuberculosis of adolescence has been increasingly arrested; occupational fatalities have been constantly lessened; pneumonia, the friend of the aged, septicemia, peritonitis and other serious infections have yielded in satisfying degrees to the restraining influence of the antibiotics; and the degenerative diseases of middle life are being postponed. Thus we must accept the inevitable fact that cancer diagnosis and treatment are becoming increasingly important.

The occurrence of cancer is not limited to racial, geographic or national boundaries, although cancers do vary in incidence as a result of certain environmental and genetic influences. So cognizant of this fact has the world become, that an International Union Against Cancer has been organized by 53 participating nations to constitute a community of interest in fostering coordinated and fundamental cancer research, and dissemination of information to all peoples. The government of the United States recognized the urgent importance of this health problem, and in consequence established the great National Cancer Institute. In addition, through proper advisory committees, the federal government dispenses funds and grants in aid to laboratories, hospitals, medical schools and institutes for cancer research. The yearly federal budget allocated for this purpose amounted, in 1956, to $48,428,000, and a sum of similar proportions is collected yearly by the American Cancer Society, an organization of public-spirited laymen and physicians.

Dr. Pack delivered the Arthur Erskine Memorial Lecture on this subject at the 1955 Annual Meeting of the Iowa State Medical Society, but a combination of circumstances prevented his giving his manuscript to the JOURNAL for publication at that time. The rapid advances which have taken place in cancer surgery since then have necessitated his revising the paper very considerably in order that it may be up-to-date.

Of the man for whom the Lectureship is named, Dr. Pack has written: "Arthur Wright Erskine, of Cedar Rapids, was an internationally renowned roentgenologist. He was one of the pioneers in x-ray therapy, contributing many original and important research accomplishments in ionization measurements and dosimetry which did much to convert this mode of treatment from an empirical to a scientific discipline. He devised ingenious and new technical methods for applying radiant energy in the treatment of cancer, such as the employment of a transvaginal x-ray cone for cancers of the uterine cervix. In common with other early roentgen-ray martyrs, he suffered the mutilating loss of most of his fingers. His book PRACTICAL X-RAY TREATMENT was an authoritative guide for many years.

"Dr. Erskine's virtues and leadership were recognized by his colleagues, and they conferred many honors on him such as the presidencies of the Radiological Society of North America, the American Roentgen-Ray Society, the American College of Radiology and the Iowa State Medical Society. He was the perennial secretary of the Iowa State Cancer Committee.

"In selecting some modern problem in cancer treatment for the Erskine Lecture, I dealt with a subject in which Dr. Erskine was intensely interested and to which he made many contributions."

Cancer is not an unknown disease. Great libraries are needed to house the immense body of facts that have accumulated concerning the many neoplastic entities. The natural histories of almost all of the regional and histogenic varieties of cancer have long since been recorded by the several generations of great anatomic pathologists, and they also have established proper classifications for the neoplastic diseases.

Investigations into the origin of cancer have pursued dichotomous pathways into the fields of (a) *causal genesis* and (b) *formal genesis*. About the former, many specific facts are known. Hundreds of different carcinogens have been isolated, the industrial hazards of occupational cancers have been discovered and prophylaxes have been arranged, and almost every type of cancer that occurs within the human body has been reproduced in an experimental animal. Concerning the formal genesis of cancer—i.e., the very nature of the disease itself—all is still mystery. The formal genesis is concerned with the perpetuation of cell division and the factors regulating and inhibiting it, as well as the unsolved role of the tumor-host relationship in the control or unrestrained growth of cancer. One takes signal comfort from the fact that today, more than ever, young men and women are expending selfless days and nights in unquiet and determined research for definitive clues about the formal genesis of cancer.

RADIATION THERAPY

During the first three decades of this century, enthusiastic emphasis was placed on the possible role of radiation therapy as a curative measure for cancer. Of all methods of treatment, irradiation provided the theoretic ideal, for in some instances it could accomplish cure and at the same time preserve the part that the cancer had invaded. Pathologists, physicists, biologists and clinicians conspired to remove radiation therapy from the uncertain dangerous milieu of its empirical application and make of it an exact applied science. The radiosensitivity of all cancers became known and categorized, and all factors responsible for this susceptibility were discovered. In the therapeutic application of x-rays and radium, dosimetry became as accurate as a mathematical formula. The biologic factors—e.g., time-intensity, fractionation of dosage, comparative recuperation rate of normal and neoplastic tissues—all were utilized in the safer employment of irradiation for the treatment of cancer in the human being.

Progress in the last two decades has been chiefly in the improvement of apparati as sources of the radiant energy used in cancer therapy, for example supervoltage x-ray units functioning at one to two million volts, cobalt-60 radioactive bombs, the 24,000,000-volt Betatron, and rotating chairs or tables designed to deliver circumferential irradiation to deep and centrally located cancers. The motive influencing these modern advances has been to deliver the greatest dose possible to the cancer itself with minimal damage to normal tissues. As meritorious as these refinements have been, the Curability of cancers by irradiation has not been proportionately bettered, and the ultimate in the control of cancer by this method may already have been achieved, perhaps because the more important determinant is the basic nature of the specific cancer, its biologic pre-determinism, its inexorable tendency in some instances to become systematically disseminated.

The radioactive isotopes, when first introduced almost 20 years ago, gave brilliant promise of fulfilling the expectations of most cancer researchers —namely, to discover a specific substance which, when administered, would be selectively absorbed from the blood stream by the cancer cell in greater concentration than by other tissue cells, and which, after becoming intracellularly deposited, would exert a lethal action. Although radioactive isotopes have many ancillary functions possessed of varying degrees of value in cancer therapy, the chief indications for their palliative systemic employment thus far have been (1) the administration of I^{131} for certain functioning cancers of the thyroid gland, and (2) the occasional use of radioactive phosphorus in the treatment of lymphomas (the lymphoid and myeloid tissues' avidity for phosphorus being from two to two and a half times that of other tissues). Several radioactive isotopes such as radioactive cobalt-60 have been cheap and efficient substitutes for radium salts or radon emanation for the purpose of interstitial irradiation and in large bombs or surface applicators in lieu of supervoltage x-ray apparatus.

ENDOCRINOLOGY

The endocrinology of neoplastic diseases indicates that hormones play significant roles in the diagnosis, etiology and therapy of tumors, both benign and malignant. Functioning tumors of the endocrine glands frequently provoke certain signs and symptoms that are of diagnostic aid, particularly in the case of tumors of the pituitary, adrenal, ovary and islets of Langerhans. Hormones occurring naturally within, or administered to, genetically susceptible subjects may be the inciting agents for the development of cancer—e.g., in experimental animals, many varieties of cancer may be induced by the introduction of estrogens. Another isolated example would be the rarity of prostatic cancer in eunuchs. In therapy, however, the hormonal relationships to certain cancers have furnished important bases for successful and prolonged palliative relief. In brief, the chief applicability of this knowledge has been in the case of certain cancers that seem to require the presence of a certain hormone or hormones in sufficient concentration for their continued survival and growth. For prostatic cancer, ablative endocrine therapy in the form of surgical castration or its functional equivalent, namely the administration

of large doses of estrogens, with inactivation of testicular function, has proved to be of immense worth. For those mammary cancers found to be susceptible to hormonal influences, such measures as testosterone therapy, oophorectomy, bilateral adrenalectomy and hypophysectomy have added months and years of comfortable life, but these patients must be carefully selected, for all breast cancers are not equally influenced.

CHEMOTHERAPY

Experimental and applied chemotherapy have consumed more time and money than any other aspect of cancer research. More untimely and premature predictions have been made, with unwise publicity and consequent disappointment to doctors and patients, than have occurred as the result of any other medical research.

A temporary inhibition or recess in the fatal course of acute leukemia, for a few weeks or months, with the patient still a semi-invalid, has been hailed as an epochal achievement, while at the same time new methods of successful surgical therapy with resultant cures have excited little comment.

None of the widely exploited wonder drugs have exerted any demonstrable cancericidal effects on the majority of cancers in the human being, with the exception of malignant tumors of the lymphoid system. Lymphoid and myeloid tissues admittedly are labile to numerous toxins, and so are their neoplastic congeners. What more natural medium for the experimental use of toxic chemicals than patients with malignant lymphomas? But until some chemicals are discovered to have deleterious action on cancers such as those of the pancreas, lung, tongue and stomach, and on melanomas, we shall review the reports on chemotherapy of lymphomas with detached interest and skepticism.

SURGICAL THERAPY OF CANCER

The scope of surgical treatment of cancer has advanced almost to the limits of sacrifice of body tissues and organs. The limit seemingly depends upon the essentiality of the organ—i.e., whether life can be sustained without it. Improvements in anesthesia, the use of antibiotics, the recognition and correction of metabolic abnormalities after the sacrifice of important functional organs and the maintenance of proper water and electrolyte balance have made these extensive operations feasible and relatively safe for the patient. But a radical procedure should not be performed for the sake of radicality itself. Rather, emphasis must be put on what should be considered an *adequate* operation for the particular patient with a cancer of a given extent.

In their efforts to eradicate a cancer in its entirety and out of desperation for want of something better to do for the afflicted patient, surgeons will contiue to divorce the patient from the multiple organs involved. No surgeon, however, has such a mechanistic philosophy about cancer and its spread as to believe that surgically extirpative measures are the ultimate answers to the problems of cancer treatment. These extended and disabling operations will continue, however, even though surgeons know that they will afford cures for few. Many will be comforted, and, as Confucious said, it is better to have a feeble light from a single candle than to live in utter darkness. "If every man would mend a man, how soon the world were mended."

A few regional or visceral types of cancer will be reviewed in the light of recent changes in the philosophy or technic of therapy.

MALIGNANT MELANOMA

The pigmented mole is the most frequent tumor in the Caucasian race, and the malignant mole is the most malignant of all accessible cancers. The greatest opportunity for the prophylaxis of cancer lies in the early excision of moles which are of the type that under certain circumstances degenerate into the malignant melanoma. Moles of the following sorts should be removed: (1) junctional nevi in childhood before pubertal changes occur; (2) all moles on the genitals and the feet, because of their great predisposition to undergo malignant changes; (3) all moles which show evidence of darkening during pregnancy; and (4) all dark moles in patients with fair skin, blue eyes and yellow hair, and in freckled, red or sandy complexioned people.

Skin lesions suspected of being melanoma should be totally excised, not excised for biopsy. If a malignant melanoma is found, then a three-dimensional dissection should be performed ruthlessly and widely, sacrificing the skin in all directions around the tumor and deeply below the level of the fascia. The resultant large defect usually necessitates skin grafting, if it is on an extremity. If the melanoma is on a finger or toe, an amputation of the digit is performed. If it is situated on the trunk, the large surgical defect may be closed by sliding skin flaps or a Z plasty.

If a melanoma is situated relatively close to the regional lymph nodes into which one might reasonably expect lymph-borne metastases to be deposited, such as in the upper thigh or lower abdomen or pubis or genitals with metastasis to the groin, or melanomas of the upper arm, pectoral, scapular or infra-axillary regions with metastasis to the axilla, or melanomas of the skin of the face, lower scalp and neck with metastasis to the cervical lymph nodes, the situation lends itself quite well to a radical dissection that is referred to as a monobloc excision, or excision and dissection in continuity. By this procedure, a wide segment of skin is removed distal to the primary melanoma, extending up to and including the skin overlying the regional lymph nodes. The skin flaps are dissected widely back, the regional lymph nodes are removed, and the intervening fat, fascia and lym-

phatic pathways are excised in continuity. This procedure is done even in the absence of palpable evidence of enlarged lymph nodes, if the location of the melanoma is such that the operation is feasible.

On the other hand, if the melanoma is situated on the hands or feet, in the skin of the leg below the knee or low on the forearm, and if there is no clinical evidence of metastasis to the groin or axilla, respectively, the lymph nodes in the groin or axilla are not molested. Following the surgical treatment of the primary tumor, the patient is carefully observed at frequent intervals. If enlarged lymph nodes do occur in the groin or axilla, one is removed for microscopic study, and if melanoma is found to be present, then the prospect exists of amputation of the extremity. It is asking too much that a cancer as malignant as a melanoma should spread all the way from the hands and feet to the axilla and groin, respectively, through the myriads of lymphatics and their sluggish circulation without any of the cancer cells becoming enlodged enroute in the lymph nodes intercalated along those pathways. With only a very few exceptions, a discontinuous operation has seldom saved the life of the patient. As a rule, a groin dissection for metastatic melanoma secondary to a sub-ungual melanoma of the toe will result, after the amputation of the digit, in the occurrence of multiple melanotic nodules in the intervening tissues of the extremity. It is on this account that serious consideration should always be given, in situations of this character, to a hip-joint disarticulation, with deep iliac dissection. In a case involving an upper extremity, interscapulothoracic amputation should be considered.

The end results in the treatment of primary melanoma without metastasis consist of 40 per cent five-year definitive cures, but in those patients who have metastases to the regional lymph nodes, in whom the principles of treatment adumbrated above may be applied and who have not been treated elsewhere, 20 per cent or slightly fewer are five-year definitive cures.

CANCER OF THE BREAST

In the surgical literature, one still sometimes sees arguments for the discontinuation of radical mastectomy in favor of simple removal of the breast, either alone or in combination with irradiation. The practice is rather popular in certain European clinics. Paradoxically, statistics have occasionally been published which, unless critically analyzed, tend to show little advantage for the complete procedure.

I contend that it is never safe to assume that metastatic axillary breast cancer does not exist, if clinical evidence is one's only basis for doing so.

The difficulty which has arisen regarding these figures on incomplete surgery has resulted from improper comparisons between unselected cases treated by radical mastectomy and special groups of cases that were subjected to simple operations. Thus, we could cite experience with a small group of cases showing 52 per cent five-year survivals from simple mastectomy alone, and 42 per cent survivals without recurrence when only the local tumor was removed and the remainder of the mammary gland was preserved. The explanation of these paradoxical survival rates lies in the most careful selection of patients with small, well-differentiated, localized breast cancers. However, a survival rate of 50 per cent from a conservative operation where 70 to 90 per cent cures are obtainable by radical mastectomy while the early cancer is localized in the breast signifies a preventable loss of 20 to 30 lives for each 100 patients treated. Such a cost would be extremely difficult to justify.

It cannot be doubted that permanent cures have been obtained by simple operations in selected cases, particularly where adequate irradiation has been added, yet there is no way in which one can be certain in any particular patient that the disease was localized within the limits of dissection provided by a minor surgical extirpation.

THE EXTENDED RADICAL MASTECTOMY

In several clinics throughout the world, the extension of radical mastectomy outlined by Halstead and Meyer is being practiced. This aims essentially at resecting in continuity certain lymph channels and nodes which represent another primary echelon of metastatic spread, the internal mammary chain, or at resecting secondary or even tertiary echelons of total involvement. Chest-wall recurrences in the costochondral region, for example, are most likely manifestations of metastases to the internal mammary lymphatic chain. The plastron no longer constitutes an insurmountable barrier to the attack upon breast cancer, and the accomplishment of this attack appears most promising, but the results cannot be finally evaluated until a significant number of patients have been so treated. One cannot ignore the high incidence of metastasis to the internal mammary chain of lymph nodes which occurs in certain breast cancers and which has been so thoroughly investigated by Urban, Handley, Dahl-Iversen and others. It has been our routine practice in all breast cancers situated in the medial segment of the breast, and particularly those in the subareolar or central segment, to perform extended radical mastectomy consisting of the orthodox procedure with axillary lymph node dissection plus the removal of a rectangular segment of the chest wall at the sternocostal junction incorporating the internal mammary chain of lymph nodes, which are involved by metastases in approximately 40 per cent of patients. The defect in the chest wall is closed by insertion of a graft of fascia lata.

THE INCIDENCE AND PROBLEM OF BILATERAL BREAST CANCER

What explanation exists for the apparently increased frequency of bilateral mammary cancer? Women apply for treatment at a much earlier stage in the development of their cancers, and as years have passed, the incidence of axillary metastases on the whole and in most communities has decreased. The natural consequence has been a higher rate of curability and a greater proportion of women living indefinite periods after radical mastectomy. With each passing year of survival, the latent period for unsuspected incipient cancers in the opposite breast is shortened. In other words, these women live long enough for cancers in the fellow breast to become manifest and to be detected. Women who have survived a radical mastectomy for breast cancer for more than five years run the risk (one in 10 to 13) of developing a second primary cancer in the opposite breast. The same etiologic factors influential in the development of the original cancer of one breast are conceivably active in the opposite breast. The same genetic and hormonal factors coexist. In cases of bilateral mammary cancer occurring at disparate times, it has been well known that the longer the interval before cancer becomes clinically apparent in the second breast, the better the prognosis.

When an apparently normal breast has been removed in conjunction with the cancerous opposite breast, gross and microscopic sectioning of the tissues has occasionally revealed an unsuspected focus of precancerous changes and early cancer in the second breast.

The operation of bilateral mastectomy for unilateral cancer consists of a radical mastectomy on the involved side, including the conventional removal of the pectoral muscles and the wide subcutaneous fascial and axillary dissection together with a simple mastectomy for the opposite breast, the whole procedure being done in continuity through a Stewart transverse incision.

It is an extraordinarily difficult task to secure consent for removal of the opposite normal breast at the same time as the planned radical mastectomy. The procedure is advised many more times than it is accomplished. After a unilateral mastectomy, many women admit that the removal of the opposite breast would have been cosmetically better because of the ease and symmetry of dressing, but preoperatively they cherish the other breast as a token preservation at least of femininity. Education of the public in this matter and a wider acceptance of the principle of bilateral mastectomy by surgeons would overcome this handicap.

CANCER OF THE ESOPHAGUS

In earlier years, the opinion was held that cancer of the esophagus might be a highly curable neoplastic disease, when once the technical difficulties of the operation and the complicating hazards were overcome. However, during the past 15 years, in which esophagectomies have been done in considerable numbers at various centers, the removal of primary esophageal cancer has enabled patients to live long enough for the uncomplicated natural history of the cancer to become manifest. It is now realized that many esophageal cancers—provided the patients do not die of esophageal obstruction, mediastinitis, hemorrhage and so forth—tend in the course of time to become a generalized disease with visceral metastases. Furthermore, the tendency of esophageal cancer to extend intramurally far up and down the esophageal tube to remote lymph nodes in the neck, superiorly, and into the juxtacardiac and retroperitoneal regions under the diaphram, inferiorly, prevents the curative success of simple segmental resection. Theoretically, if one were to do an operation intended for cure, it would be necessary for him to remove the entire esophagus, including the superior segment of the stomach and the juxtacardiac lymph nodes, inferiorly, and the cervical esophagus up to the pharynx, superiorly. The operation would also include a mediastinal lymph node dissection. The absence of a serosal coat on the esophagus evidently permits the more hasty dissemination of the cancer to the mediastinal structures both by lymphatic spread and by direct invasion.

Esophageal cancers involving the extreme lower segment of the esophagus are still attacked surgically by a left thoraco-abdominal incision, with anastomosis usually below the aortic arch. For cancers of the mid- and superior thoracic esophagus, the right thoracic approach is preferable, for it facilitates mobilization of the esophagus in a way that is infinitely better than that which one has when he attempts to dissect the esophagus from beneath the arch of the aorta on the left side.

The restoration of pharyngogastric continuity has been accomplished by various ingenious methods such as complete mobilization of the stomach, preserving the integrity of the blood supply at its distal extremity and introducing the organ into the chest and neck for high anastomosis. The transverse colon or a well vascularized limb of jejunum has also been introduced as a substitute for the esophagus. In some instances it has been routed through the anterior mediastinum, since this is the shorter distance between the abdomen and the neck, and the organ has been snaked up beneath the sternum through this avascular space.

Some realists, when confronted with the low cure rate in cases of esophageal cancer, have been content to perform a segmental excision, removing the primary cancer and employing a plastic tube for substitution. We have used this measure, and it has been successful as a means of permitting the patient a considerable degree of palliative relief.

Very worthwhile palliation can be secured by radiation therapy in the majority of esophageal

cancer cases. Supervoltage irradiation by means of one to two million volts, a cobalt bomb or a radium element pack of proper construction, the beam being distributed circumferentially around the chest as the patient is rotated in a chair under fluoroscopic guidance, has been effective in delivering a considerable depth dose into the substance of the cancer. The treatment must not be given too quickly, or the rapid dissolution of the cancer may lead to perforation and suppurative mediastinitis. The majority of esophageal cancers, if treated with small fractions over a relatively long time, can become disengaged with consequent resumption of swallowing, lessening of discomfort, prolongation of life and avoidance of other serious, distressing complications which accompany cancer of the esophagus.

CANCER OF THE STOMACH

Simple subtotal gastrectomy such as has been commonly practiced for several decades has not afforded a sufficiently high percentage of cures to satisfy any surgeon. Recurrence not only in the residual stomach but in the immediately adjacent lymph nodes has taken place so frequently that it has been obvious that the scope of excisional surgery was not radical enough to encompass the extent of the disease. The injection of a visible dye such as pontamin sky-blue into the various segments of the living stomach show the routes of lymph flow into specific regional groups of lymph nodes. The clearance of the surgical specimen by the Spalteholz technic following resection of the entire stomach, spleen, distal two-thirds of the pancreas and perigastric tissues reveals unexpected metastases in lymph nodes quite far removed from the site of the primary cancer, and with such uniformity of occurrence as to furnish definite indications for a standardized procedure known as the "extended total gastrectomy." In short, for cancers of the middle and superior segments of the stomach, the metastases occur so commonly along the entire lesser curvature and the greater curvatures of the stomach, including the infra- and retropyloric regions, and to lymph nodes in the juxtacardiac groups right and left and the lymph nodes in the hilum of the spleen and along the superior margin of the tail of the pancreas, as in all cases to necessitate total gastrectomy, splenectomy and subtotal pancreatectomy of the distal pancreas, together with a liberal resection of cuff of the esophagus and duodenum.

Total gastrectomy of this extent is also indicated for all malignant lymphomas involving the stomach, and for diffusely invading cancers regardless of location. Cancers of the distal third of the stomach are now treated by a subtotal gastrectomy in which the entire lesser curvature of the stomach downward is included in the specimen and only the greater curvature side of the fundus is preserved for gastrojejunostomy. This operation is completed by a thorough dissection of the retro-pancreatic and para-aortic lymph nodes, together with those extending up the hepatoduodenal ligament.

We have some patients living, well and working for more than 10 years after having their entire stomachs removed. Our experience now totals more than 250 instances of total gastrectomy.

Substitutive stomachs have been constructed by interposing segments of the jejunum, transverse colon or right colon between the esophagus and duodenum or esophagus and jejunum, respectively, in an attempt to afford a temporary reservoir and to avoid some of the unpleasant sequellae of total gastrectomy, notably the dumping syndrome. In our hands, these substitute stomachs merely delayed, rather than prevented the occurrence and the severity of the post total-gastrectomy syndrome. The vasomotor phenomena characteristic of this symptom complex consist of a feeling of weakness, collapse, pallor, perspiration, palpitation and cardiovascular changes which are typical on the electrocardiogram and are suggestive of transient coronary spasm. These are coincident with the rapid absorption of carbohydrates from the small intestine, with consequent alterations in the potassium levels, hemoconcentration, hyperglycemia, etc., all of which conspire to produce the symptom complex.

The best treatment is the avoidance of excessive sugars and starches, and the institution of a high-protein diet, with frequent small feedings daily. There is apparently a lessened pancreatic external secretion, with steatorrhea and slight creatorrhea in the majority of patients. The operation as described offers a hope of cure to a greater number of patients.

CANCER OF THE PANCREAS

The enthusiasm that followed the development of subtotal pancreatectomy with duodenectomy for cancers of the head of the pancreas and of the ampulla of Vater has been tempered during the passage of time by the realization that this operation does not establish a cure in the majority of instances. Palliation is definitely accomplished, but few cancers of the pancreas proper are cured. The salvage rate is much better for periampullary carcinomas. The surgical removal of the head of the pancreas, together with the entire duodenum, has not been sufficient to control even the local extension of the disease, to say nothing of preventing distant or visceral metastases. Examination of the pancreatic juice obtained from the duct of Wirsung at the time of transection of the pancreas has shown viable cancer cells. Furthermore, the operation as originally conceived does not provide for an adequate dissection of peri-pancreatic lymph nodes. More recently, the operation has been extended to include a total pancreatectomy, splenectomy, dissection of all of the peri-pancreatic lymph nodes, particularly those along the splenic pedicle, the superior margin of the pancreas, and after

mobilization and resection of the duodenum and head of the pancreas from the superior mesenteric vein, a meticulous removal of the retropancreatic and peri-aortic lymph nodes as well as those extending up along the hepatoduodenal ligament.

The surgically induced diabetes resulting from total pancreatectomy is more easily regulated with a standard dosage of insulin and dietary restrictions than is the usual spontaneous diabetes occurring in a patient who has a diseased pancreas. Thus, it is not a great postoperative handicap. With the prolongation of postoperative life provided by this extirpative procedure, it has now become apparent that cancer of the pancreas is an extremely malignant neoplasm and that the natural history of the disease in due course of time entails a tendency for widespread visceral metastases militating against the prospect of ultimate cure.

During the last two decades, many variations and compromises have been suggested for the postoperative reconstruction of the external biliary and upper gastrointestinal tracts after pancreaticoduodenectomy. The procedure which we have routinely employed is the simplest one possible. The transected jejunum below the ligament of Treitz is mobilized and brought up through the tranverse mesocolon for a retrocolic type of direct or end-to-end choledochojejunostomy. A jejunal loop below the mesocolon is elevated and employed for a terminolateral type of gastrojejunostomy as an antecolic anastomosis. This reconstruction entails only two anastomotic procedures, one retrocolic and one antecolic, the latter one insuring to some extent that there will not be excessive regurgitation of gastric contents and food into the common bile duct, with the hazard of ascending cholangitis.

Hepatic Lobectomy for Tumors of the Liver

Surgeons have been reluctant to perform major hepatectomies, being intimidated by two possibilities: first, the danger of intractable and perhaps fatal hemorrhage because of the complexities of the triple circulation—i.e., high pressure arterial flow through the hepatic artery comprising 40 per cent of the inflow of blood and a low pressure venous flow through the portal vein comprising 60 per cent of the inflow of blood and finally, the intricate biliary circulation; and second, the danger of interfering with some of the no fewer than 70 important functions of the liver, many of which are vital.

As regards surgical anatomy, the liver is bipartite, for the arterial supply to the right and left lobes do not comingle through the interlobar fissure. However, the portal venous circulation does traverse the main dividing septum, inasmuch as the left portal branch is comprised of a union of several vessels such as the left umbilical vein carrying arterial blood in the embryo, the ductus Aurantii and others, and this composite left portal vein sends recurrent intrahepatic branches across the septum to drain into the caudate and quadrate lobes. If the surgeon wishes to remove the right or the left lobe of the liver, he should do it under vascular control by preliminary ligation of the corresponding hepatic artery, portal vein and bile duct to that particular lobe. The only other vessels to be ligated in the operation are the several hepatic veins emptying into the vena cava on the right side and the single large hepatic vein draining the left lobe. The operation is relatively bloodless and is safe if performed by this technic.

The indications for removal of a lobe of the liver include primary liver cancers, either hepatocarcinomas or cholangiocarcinomas, and of course they should be unilobar in their origin and distribution. Invasive carcinomas of the gallbladder with extension into the liver substance call for total right hepatic lobectomy, inasmuch as the invasion of the liver, which is a vascular sponge, inevitably results in intrahepatic metastasis or dissemination to the portal lobules. Nothing short of removal of the entire lobe will give the patient a prospect for salvage. I have removed the right lobe of the liver in several instances for malignant mesenchymal tumors such as fibrosarcoma and leiomyosarcoma.

Metastases to the liver may in some instances entail a total lobectomy, right or left. The decision to perform such a major operation for metastatic cancer, either sarcoma or carcinoma, requires critical judgment. Hepatic metastases are considered from the sequence of their appearance—namely, the precocious, the synchronous and the metachronous metastases. When a huge nodular liver is the first indication of a cancer of cryptic origin, the primary cancer is usually so small as to be asymptomatic, but on the other hand, it is often highly malignant, anaplastic and very cellular, so that the prospect of affording palliative relief through removal of the primary cancer, wherever located, and hepatic lobectomy are not good. Still, we have had patients who had two years of comfortable life following such conjoined operations.

In the case of synchronous metastases in which the primary cancer, such as in the rectum or stomach, is discovered at the same time as the metastases are apparent or are discovered at operation, the decision to proceed with a hepatic lobectomy and a gastrectomy or colon resection, for example, as a two-stage operation will depend upon the judgment of the surgeon at the time. The most favorable circumstance, of course, occurs with metachronous metastases, in which the patient has apparently been cured of the primary cancer with no evidence of local recurrence, only to have the metastases in the liver appear at a much later date. Theoretically, the longer the latent period after irradiation or resection of the primary cancer and before the appearance of the metastases, the better the prospect of palliation by such a radical procedure as hepatic lobectomy. The procedure may be used for ocular melanomas

metastatic to the liver, or for other cancers such as those of the gastrointestinal tract.

The right lobe of the liver comprises 80 per cent of the total weight of the organ. It is amazing to realize that the small left lobe, comprising less than 20 per cent of the liver substance, is sufficient to maintain life and to exercise all of the important functions of the liver. All of the portal blood, of course, is deflected to the left lobe, and that remaining segment undergoes immediate regenerative hyperplasia. Even in the human being this left lobe may expand in a spherical way so as ultimately to have as large a volume as the previously intact normal liver. We have studied the factors that are influential in promoting regenerative hyperplasia of the liver in laboratory animals.

CANCERS OF THE COLON

Improvements in the management of cancers of the colon have resulted from the employment of antibiotics for defloration of the intestinal tract, the increasing use of a single-stage operation, with primary anastomosis rather than the exteriorization procedure, the exercise of proper precautions to prevent venous-borne metastases resulting from dislodgment of tumor emboli in veins during manipulative surgery, the adoption of prophylactic measures intended to lessen the hazard of implanting cancer in the anastomosis line, and extension of the scope of the operative procedure in order to insure a complete removal of the primary growth as well as any metastases that may be present, thereby improving the end results of treatment.

Several investigators have detected with surprising frequency the presence of cancer cells within the blood stream of mesenteric veins in the surgically resected segments of bowel. Furthermore, pathologists who make many microscopic sections to study the intramural or invasive growth of colonic cancers have found demonstrable blood vessel invasion by the cancer in 20 to 30 per cent of cases. In the hope of lessening the frequency of the subsequent appearance of hepatic metastases, the initial step in resection of the large bowel should be the immediate ligation of vessels of the mesentery, before the cancer-containing segment is manipulated in the performance of surgical removal. Circumferential ligation of the colon well above and below the cancerous segment is another initial step. The subsequent transection of the bowel is performed well above and below the ligatures, with sterilization of the lumen of the bowel prior to anastomosis. Theoretically, this prevents the breaking off of loose cancer tissue in the bowel and implantation in the line of anastomosis.

Stimulated by the good results obtained through the orthodox procedures of hemicolectomy for cancers of the right bowel, the magnitude of which operation is necessitated by the presence of one supporting artery, surgeons are now treating cancers of the descending and sigmoid colon by left hemicolectomy of an extent comparable to the practice of removing the right half of the colon in an effort to improve the rate of curability. The rectum proper and the rectosigmoid are viable when dependent solely on the inferior and middle hemorrhoidal arteries. Based on a knowledge of this fact, one may remove the splenic flexure, the descending colon and the sigmoid colon, with anastomosis of the transverse colon to the rectosigmoid after proper mobilization. The marginal branch of the middle colic artery furnishes an adequate blood supply to the mobilized transverse colon that is employed for the anastomosis. The ligation of the inferior mesenteric artery at its origin from the aorta, with a dissection of the para-aortic lymph nodes and a wide excision of the mesentery, affords a more complete removal of the lymph nodes that may be implicated by metastases. Morgan, at St. Mark's Hospital, London, found that approximately 14 per cent of 1,000 surgically resected specimens had metastases in regional lymph nodes extending as far as the base of the inferior mesenteric artery, proving that this procedure would offer a better opportunity for increasing the curability. This more radical procedure, of course, is not employed in patients who are very obese or who are poor operative risks.

CANCER OF THE RECTUM

The classical abdominoperineal rectal resection has maintained its deserved reputation for the past two surgical generations. As originally conceived and executed, it was a two-dimensional dissection, being quite adequate as far as its upward extent was concerned, and quite adequate below because it included the anus, but it wasn't sufficiently radical in removing the lateral spread of the cancer. The three-dimensional rectal resection now removes not only the rectum from the hollow of the sacrum, and of course from the base of the bladder or from the cervix and the vagina, but the lateral dissection includes the lymph nodes in the iliac and obturator groups. Fifteen to 20 per cent of patients having pelvic lymph node dissection are found to have metastatic cancer involving these lymph nodes, although the metastases were not clinically detectable at the time of the operation. The upper extent of the operation has also been increased to include the mesentery and lymph nodes as high as the origin of the superior hemorrhoidal vessels. In the case of malignant melanomas of the anorectal canal, the scope of the prescribed operation encompasses an abdominoperineal rectal resection, with pelvic dissection of the iliac and obturator lymph nodes and, at the same operative seance and in continuity with the anorectal specimen, a major portion of the vulva, if the patient is female, plus a bilateral groin dissection. The inguinal and femoral nodes are removed in continuity with the specimen, including

the intervening lymphatics in the skin and subcutaneous tissues. If the patient is a male, the same operative technic applies, with external bilateral groin dissection and a liberal sacrifice of perianal and scrotal skin in continuity.

There are four different operations from which one may choose the one most suitable for the patient, depending upon the extent and location of the cancer, viz.: (1) total colectomy and rectal resection for rectal cancers associated with colonic polyposis; (2) the classical abdominoperineal resection supplemented by pelvic lymph node dissection; (3) pelvic evisceration for rectal cancers involving contiguous organs; and (4) conservative rectal resection with preservation of sphincteric control.

It is a strange paradox that one who advocates and practices radicality in the surgical management of most cancers should at the same time advocate the conservative treatment of rectal cancers in selected cases. I am of the opinion that a definite place exists for preservation of the rectal sphincter if one exercises good surgical judgment. Unfortunately, some surgeons who have persistently advocated preservation of the rectal sphincter have attempted to increase the indications for this operation to such an extent that they take out more and more advanced cancers until ultimately the recurrence rate becomes so high that they abandon the operation altogether. There is a happy medium. If a rectal cancer is polypoid, if it is freely movable, if it is sessile, if it doesn't encircle the bowel, if it is Grade II or Grade I in anaplasia, and if it is situated well up above the anal sphincter, then one may employ one of several measures for removing it without sacrificing the rectal sphincter.

If the cancer is at the level of the rectosigmoid or slightly above it—i.e., above the level of the peritoneal reflection—and if it is a very early cancer, one can do a superior segmental resection with primary anastomosis through an abdominal approach. Another procedure which we have sometimes employed is a modification of the old "pull through" operation of Hochenegg. The intussusception of the rectum or rectosigmoid cannot be prolapsed readily through the manually dilated but intact sphincter in patients who are fat, or have much fat in the mesentery or surrounding the rectum and the sigmoid colon. But in a thin subject with an early cancer of this type, it is indeed a very satisfactory and easy method of resection. Mobilization of the bowel through a preliminary abdominal approach must be more complete than for the ordinary abdominoperineal rectal resection, and it is dissected free down to the pelvic floor. After the abdominal mobilization of the rectosigmoid and rectum has been completed, the patient is placed in the lithotomy position and the rectum is intussuscepted by traction so that even the anal canal is turned inside out and the tumor is readily visible on the outside surface. The resection and anastomosis are then done externally, and afterwards the anastomotic bowel can easily be pushed upwards through the temporarily relaxed sphincter.

Though I advocate pelvic evisceration on the one hand and conservative operation for cancers of the rectum on the other, I should like to emphasize that one must always exercise meticulous surgical judgment in selecting cases.

PELVIC EVISCERATION

The operation of pelvic evisceration has been justified, and has sometimes been curative, in the treatment of locally recurrent cancers of the rectum, ovary, uterus and urinary bladder, often after radiation therapy has failed and even when multiple fistulous communications exist between the bladder, vagina and rectum. Pelvic cancers that were formerly considered inoperable because of invasion of neighboring organs are now being resected. For example, at least 30 per cent of women dying of cancers of the uterine cervix have the cancer still confined within the true pelvis at the time of death.

The extreme limit of radicality for pelvic cancers is the operation of pelvic evisceration in which all of the structures of the pelvis are removed. The operation in many cases is admittedly no more than a palliative procedure. The surgical procedure differs in the sexes only because of the different organs implicated. In the male, the urinary bladder and prostate are removed with the rectum, together with a dissection of all the pelvic lymph nodes. In the female, it involves removal of the rectum, the vagina, the vulva, the internal genitals, the urinary bladder and the urethra.

In pelvic evisceration, one must dispose of the ureters, the terminations of which are removed with the specimen. There is considerable difference of opinion as to the manner of this disposition. Whenever the urinary bladder is removed for pelvic cancer other than rectal, and when the rectum can be preserved, then one may practice bilateral ureteral implantation within the colon because the rectum and colon serve as an excellent reservoir for urine, but if a permanent abdominal colostomy is to be done, the decision rests upon whether the ureters should be implanted in the colon, giving the patient a wet colostomy, or whether they should be implanted in the skin as permanent ureteral neostomies, or finally, whether an ileal bladder should be constructed—i.e., an isolated segment of ileum into which both ureters may empty. At the present time, we still favor the cutaneous ureterostomies because of the lessened morbidity from the ureteral cutaneous transplants, the lesser surgical mortality and the decreased incidence of serious functional renal and metabolic disturbances which as yet continue to

occur in patients with the so-called wet colostomies.

Reluctant as the surgeon may be to inflict this major disability upon his patients, he has no right to make the decision for the individual patient whose tenacity for life may lead him willingly to accept disablement in return for a worthwhile period of palliative relief or for a chance—however remote—of cure.

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A Critical Evaluation of the Treatment Of Hypertension

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ACCORDING TO Webster's dictionary, if one wishes to be critical, he may either make unfavorable comment or be nicely judicious and exercise careful judgment in order to see a thing clearly and judge it fairly. Although I start with a few acknowledged prejudices about drug treatment for hypertension, still I hope that the second definition of the word *critical* may properly be applied to what I am about to say.

UNSOLVED PROBLEMS

Before going into detail about treatment of high blood pressure, I think it wise to pay fleeting attention at least to some of the basic problems that hypertension poses, for our attitudes toward many of them dictate our choice of therapy today, and the solutions we find for others of them will pave the way for improvements in our methods.

1. It is worth repeating that there probably are many causes for the syndrome that we call essential hypertension. From this amorphous body of symptoms, it is likely that some distinct disease entities will eventually be delineated, and we shall then have more definite information from which to work. Still, it is important for us to realize that in most patients having high blood pressure, regardless of the cause, the same problems sooner or later develop, if the course is protracted. The physician usually handles them by making fine adjustments in an identical set of tools. The body of this discussion will concern the treatment of the so-called "essential" hypertensive and the patient whose hypertension has a known etiologic factor, but whose elevated blood pressure fails to respond to the removal of that cause.

2. We should also continue to be aware of the fact that even in most situations where the "cause" seems apparent, we do not know the precise mechanism by which the arterial hypertension occurs. For instance, although we understand why patients with pheochromocytoma have periodic elevations of blood pressure, we do not know why some of them develop persistent arterial hypertension, even though the pressor agent from the chromaffin tumors is emitted sporadically. Likewise, there is considerable doubt concerning the cause of the arterial hypertension in what, on first

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analysis, would appear to be a very simple situation, such as coarctation of the aorta. Problems of this nature make the symptomatic care of patients with high blood pressure difficult, and at times make logical and definitive therapy impossible.

3. Some other ideas which have recently been advanced may be of importance in our understanding of human high blood pressure and the diseases associated with it. Pickering[1] has recently stated that high blood pressure may not be a disease in the ordinary sense, but simply a physical finding at the upper end of a frequency distribution curve. His concept implies that persons with essential hypertension have no qualitative difference from normotensives. He believes that the theory of essential hypertension as a specific disease entity and the notion that there is a single specific cause for essential hypertension are not only false but also harmful, for they restrict our thinking on the subject. Master, Garfield and Walters[2] have marshalled impressive data suggesting that otherwise healthy people experience a sharp rise in systolic blood pressure and a lesser rise in diastolic blood pressure with advancing age. This information is not entirely new or foreign to the impressions of American physicians, although the figures which Master and his group quote are somewhat higher than have been thought generally to be the rule for the healthy older groups. Before one attempts to use Master's blood pressure readings as evidence against disease, it would be wise for him to pause a moment to consider whether what is "normal" or "average" among the American people is necessarily healthy. These figures simply demonstrate that people can live for long periods with blood pressure at relatively high levels. They do not necessarily imply that they would not be healthier if their blood pressures were lower, and they certainly do not imply that serious vascular disease, caused by hypertension, may not be present in individual cases.

THE GENERAL USEFULNESS OF DRUG THERAPY

Despite the many unsolved problems concerning high blood pressure, there have been a number of significant and interesting developments in the treatment of the hypertensive patient, starting with the introduction of hexamethonium compounds in 1949. With these new drugs, it has become apparent that several things can be done to alter some phases of the life history of the hypertensive patient as we know it.

First and foremost, if renal failure is not present, the malignant or accelerated phase of hypertension can consistently be reversed by these compounds. Even in the presence of moderate degrees of azotemia (BUN $<$ 75 mg./100 ml.), the rapidly progressing course of this variety of high blood pressure can sometimes be stayed. That the changes of malignant hypertension can be reversed and that the life expectancy of over half of these patients can be prolonged to several times that previously reported are well documented.[3] We have seen this improvement in the expected course occur on many occasions, and we believe that at the moment it is the outstanding argument for the use of antihypertensive drugs.

Second, with effective lowering of blood pressure by means of these new drugs, hypertensive encephalopathy and signs of arteritis such as exudates and hemorrhages in the eye grounds can be cleared rapidly.

Third, symptoms such as headache, breathlessness and fatigue due to hypertensive disease can usually be alleviated by appropriate drug therapy.

Fourth, in the patient with significant systemic arterial hypertension whose blood pressure is lowered by these compounds, congestive heart failure can almost routinely be relieved. It has been our experience that once congestive heart failure has been relieved in this manner, it seldom recurs if the blood pressure is kept low, even when such traditional cardiac remedies as digitalis are stopped. Indeed, despite the fact that congestive heart failure was the leading cause of death in hypertensive patients before these drugs were introduced, Schroeder and Perry[4] have pointed out that it is seldom the cause of death in the well-treated hypertensive patient today. There is suggestive evidence—though not so clear-cut as with congestive failure—that cerebral hemorrhages are also less frequent when effective blood pressure lowering has been achieved by means of these compounds. Schroeder and Perry have also pointed out that, rather than dying of hypertension, these patients fall victim to the complications of arteriosclerosis such as myocardial infarction and cerebral thrombosis. On the one hand, then, this trend emphasizes that we can do something about the specific vascular disease caused by hypertension; on the other hand, it makes us doubly aware that arteriosclerosis is a companion disorder or a sequel to high blood pressure in almost every case. Treatment of hypertensive vascular disease, then, will be incomplete until effective measures have been found for treating arteriosclerosis.

At this time, we have no answer to the important question of whether or not the lowering of blood pressure benefits milder hypertensives by prolonging their lives or protecting them against complications. Controlled studies of this problem are difficult to set up and finish because of the long time required. Smithwick[5] has recently published a report on patients subjected to lumbodorsal sympathectomy. Comparing their life expectancy with that of a control group of patients who for one reason or another had refused the surgical procedure, he found that there was a significant increase in the life span of Group II and III patients who had been treated by sympathectomy, when compared with similar patients treated by medical procedures that were available in the

1940's. Further studies of that type are needed today to give us information concerning the efficacy of drugs in the early stages of systemic arterial hypertension. But there are difficulties in such studies. Even in Smithwick's careful work, there is one objection that may be raised. The factors dictating which patients were subjected to surgery may have been the factors which determined the differences in survival.

In order to complete my evaluation of practical therapeutic procedures, I should like briefly to discuss four classes of drugs and to make a few comments about dietary therapy and sympathectomy.

RAUWOLFIA

The rauwolfia compounds are mild hypotensive agents whose exact method for lowering blood pressure is unknown. The whole root of Rauwolfia serpentina and its purified alkaloid, reserpine, have similar if not identical cardiovascular effects. Rescinnamine, another purified alkaloid from this source, also has some hypotensive effect.[6] In experimental animals, it is known that rauwolfia compounds cause the release of serotonin from cerebral cells and cause increased 5-hydroxy indole acetic acid excretion in the urine.[7] Whether such release of serotonin occurs in man after rauwolfia and whether it is an important mechanism for achieving hypotension are questions that as yet remain unanswered. Hollander and Michelson[8] think that the answer to each of them is "Yes." Because these drugs have relatively few major disadvantages, they have been advocated for the treatment of all stages of hypertension. In large studies it has been shown that they have striking hypotensive effects in some individuals, and a mild and sustained hypotensive effect in perhaps a majority of patients. However, sustained major reductions of blood pressure are uncommon, and results are unpredictable. Minor side effects such as stuffy nose, diarrhea, drowsiness, weight gain and perhaps increased secretion of hydrochloric acid in the stomach have not been important factors in determining the use of these agents. More attention recently has been given to the mental depression which may occur when rauwolfia has been given to patients over long periods of time. We have had two suicides and three attempts at suicide in patients who received only these compounds, and since we have had no attempts at self-destruction in hypertensive patients whom we have treated in other ways, we are inclined to incriminate the rauwolfia compounds. The fact that the three patients who attempted suicide returned rapidly to a normal mental state following the withdrawal of the drug provides us further substantiation for our opinion that rauwolfia was responsible for their depression.

Although we usually place our early hypertensive patients on rauwolfia compounds and though we frequently combine rauwolfia with hydralazine (Apresoline) in moderately severe hypertensives, and with ganglionic blocking agents in severe hypertensives, the threat of depression has made us more critical of its results. We now withdraw rauwolfia from all antihypertensive programs in which it is not obviously an important factor in lowering blood pressure, and avoid it entirely in patients whom we, or other physicians, are unable to follow closely. It might be said that the currently recognized association of depression with rauwolfia therapy has prompted us to accord this agent a healthy respect. We should have been careful from the beginning, but we now recognize that we need to have both a significant prolonged hypotensive effect and freedom from mental aberration to justify its use.

HYDRALAZINE

Hydralazine is a useful antihypertensive agent which acts centrally by inhibiting vasomotor impulses.[9, 10] The drug probably has other peripheral actions in lowering blood pressure.[11] Perry and Schroeder[12] have postulated that it may lower blood pressure by removing certain trace metals from the body by chelation and excretion in the urine. Whatever its mechanism, hydralazine has a unique cardiovascular effect. When given acutely, it causes tachycardia, a sharp increase in cardiac output,[9] an increase in renal[13] and hepatic[14] blood flow, and a decrease in vascular resistance in the entire splanchnic bed and in the cerebral circuit.[15]

Unfortunately, many long-term studies of the use of this drug in hypertensive patients have demonstrated that tolerance to its effect develops and that over a long period of time this agent alone is capable of controlling hypertension in relatively few patients.[16] As one uses increasing amounts of hydralazine, toxic effects become manifest, the chief ones being arthralgia, swelling of the joints, pedal edema, skin eruptions and finally a syndrome which resembles lupus erythematosus.[12] Fortunately, these effects are reversible in the majority of instances, and they usually do not occur if the daily dosage is kept at or below 400 mg. Despite the fact that in most patients hydralazine has been ineffective as a single agent for the treatment of hypertension, it has proved valuable in combination with ganglionic blocking agents.

At this time we seldom use hydralazine by itself, but use it primarily in combination therapy, and we believe that it is helping us lower blood pressure. Unfortunately, because of tolerance and the high incidence of toxic effects, we find that the drug often fails us in critical situations.

VERATRUM ALKALOIDS

The fall in blood pressure which is seen frequently after administration of veratrum alkaloids is produced by vasodilatation and a vagal effect on the heart excited reflexly from receptors in

the heart and great vessels.[18] In the last six years, the crude veratrum alkaloids have been supplemented by a large number of purified alkaloids from both veratrum album and veratrum viride. Despite improvements in production and standardization of these products, their use—like that of the parent compounds—is limited by the troublesome nausea and vomiting that they cause. Vomiting usually occurs before or at the time of blood pressure lowering, and it drastically curtails the use of veratrum alkaloids. In general, the hypotension produced by these drugs may last up to six hours, and is accompanied by bradycardia. Tolerance in the ordinary sense does not develop in patients treated with these drugs, and indeed at times the drug appears to accumulate in the body. Some instances of circulatory collapse have been reported after long treatment with a constant dose of these compounds.

At the present time, because of the nausea, we use veratrum preparations only when other drugs have failed. Under these circumstances, one can rarely obtain a gratifying response to therapy, but in the main the physician is plagued by problems of adjustment of dosage to obtain the hypotensive effect and avoid the emetic one.

GANGLIONIC BLOCKING AGENTS

In the treatment of the severe hypertensive, the ganglionic blocking agents are usually of prime importance. Examples of these drugs and the usual daily doses are shown in Figure 1. They act by interrupting autonomic impulses at the ganglia by combining with the receptor substance in the post-ganglionic nerve endings.[19] Thus, centrally mediated autonomic impulses to both the parasympathetic and sympathetic system are interrupted, and reflex sympathetic vasoconstriction does not occur. There is a relaxation in blood-vessel tone, and the blood pools in the dependent portions of the body. The latter tendency is most marked when the patient assumes the upright position. In orthostatic hypotension, there is usually tachycardia, a drop in cardiac output and blood pressure, and a decrease in total peripheral resistance. Except when there is orthostatic lowering of blood pressure to shock levels, there is no serious impairment of blood flow to the coronary system, the kidneys or the cerebral circuit. Some degree of orthostatic hypotension is essential to successful treatment by means of these drugs. There is often an associated decrease in bowel activity; mydriasis, with blurring of vision; dryness of mouth; impotence; and decrease in sweating from parasympathetic blockade. Since there is no paralysis of effector end organs, such side effects can be relieved if a suitable chemical stimulus is administered.

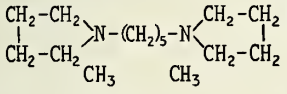
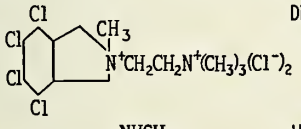
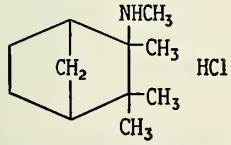
DRUG	STRUCTURAL FORMULA	RANGE of ORAL DAILY DOSE (in terms of commonly used salt)
Hexamethonium	$(CH_3)_3\overset{+}{N}.(CH_2)_6.\overset{+}{N}(CH_3)_3$	Chloride 1000-5000 mg.
Pentolinium (Ansolysen®)		Bitartrate 200-1000 mg.
Ecolid® (SU 3088)		Dimetho chloride 100-500 mg.
Mecamylamine (Inversine®)		Hydrochloride 10-100 mg.

Figure 1. The structural formulae and usual range of daily oral doses of four ganglionic blocking drugs. These drugs are usually administered in two or three doses each day. In general, smaller doses are necessary in the morning, and larger ones in the afternoon and evening for effective blood-pressure control.

Recent developments in this field have centered about the search for long-acting oral preparations. Pentolinium (Ansolysen®) and Ecolid® represent advances along this line.[20] Mecamylamine (Inversine®) is the newest long-acting ganglionic blocking agent.[21] It is a secondary amine, and thus chemically unlike the older ganglionic blockers which are quaternary ammonium compounds. The chief advantage of mecamylamine is that it is completely absorbed from the gastrointestinal tract. When complete absorption of these drugs is not achieved in the upper gastrointestinal tract, sluggish peristaltic activity may result in widely varying rates of absorption of the ganglionic blocking drug. When irregular absorption occurs, serious complications such as ileus and prolonged shock are frequent. Although these complications do occur with mecamylamine, they have neither been so severe nor lasted so long as with the other ganglionic blockers that we have used.

We have found that hexamethonium is valuable primarily as an injectable agent.[6] We have used Ecolid in 12 patients over a period of several months and have been impressed by its ability to cause selective blurring of vision. Though Ecolid is otherwise a satisfactory ganglionic blocking agent, this complaint in patients has been so severe that for the time being we have largely abandoned its use. Instead, we have been using mecamylamine, primarily because it is completely absorbed from the gastrointestinal tract and because it produces less distressing visual disturbances. On the whole, our experiences with mecamylamine have been satisfactory, and so far there has been no complication which would make us believe that it will have limited usefulness. Ganglionic blocking agents are more effective when used with a second antihypertensive agent and we have given hydralazine, primarily, and rauwolfia, secondarily.

The chief disadvantages of ganglionic blockers are (1) they require much time for regulation; (2) overdosage may occur, with (a) fainting and (b) disturbance of bowel function in all patients; and (3) in theory, they increase the likelihood of

thrombosis, when sharp falls in blood pressure occur.

Close doctor-patient cooperation and the use of home blood-pressure measurements, which we now recommend frequently, provide a solution for the problem of overdosage. The theoretical objection of an increased likelihood of thromboses probably is not important unless severe hypotension occurs. However, we do not ordinarily use ganglionic blocking agents for at least six weeks after a cerebral thrombosis, since they may impair revascularization of the infarcted area. The time that it takes a physician and his patient to control this type of therapy will continue to be a problem. The physician must know the actions of these drugs and the possible complications, and he must impart much of this information to the patient and his family. The doctor must be certain that he is giving adequate quantities of these drugs, and yet not overdosing his patient. Many failures in the treatment of severe hypertensives with ganglionic blocking agents occur because the doctor hesitates to give adequate quantities of the drugs.

None of the other side effects of these drugs are serious, but some of them may require interruption of therapy. Such things as blurring of vision, dry mouth, impotence, difficulty in micturition, lack of sweating and weakness may sometimes assume major importance. Some of the difficulties can be relieved by stimulation of the appropriate effector end-organ by such drugs as pilocarpine (5 mg.) for the blurring of vision, and neostigmine (Prostigmine 15 mg.) for the bowel and bladder paresis.

It is well to remember that the body may change in its capacity to react to ganglionic blocking drugs. Sometimes this change comes with great suddenness and may be responsible for unexpected syncope. We recognize that the following factors are capable of enhancing the hypotensive effect of these drugs: (1) heat, (2) low sodium intake or heavy salt loss, (3) alcohol, (4) vasodilating drugs, (5) constipation, (6) vigorous exercise, and (7) long rest in bed. Consequently, we advise our patients to avoid exposure to any of them.

DIETARY THERAPY

The dietary treatment of hypertension still holds an important place in the therapy of these patients. At times, weight reduction alone will apparently lower blood pressure and relieve the symptoms of these individuals. Weight reduction at the same time, perhaps by avoidance of large amounts of fat, may help control the associated arteriosclerosis. In either instance, it seems that reduction of weight in the obese patient can cause no harm and may be of considerable benefit.

There is little question that extremely low sodium diets (in the vicinity of 200 mg. of sodium or 0.5 Gm. of salt per day, or less) will lower blood pressure in a number of hypertensive patients. Salt reduction alone—and not the low-protein, cholesterol or fluid content or the rice-fruit diet—is crucial to the reduction in blood pressure.[22, 23, 24] Practically, however, because of the ease of preparation of the rice-fruit diet and perhaps because its many restrictions serve as a psychologic rallying point for patients who must eat low-sodium diets, the rice-fruit diet has been used fairly widely.

These stringent low-sodium diets have been used alone to treat the more advanced forms of hypertensive disease, but their chief role today is in support of drug therapy. Here, low-salt diets enhance the effect of the drugs and allow lower dosage schedules to be used. However, primarily because of the alteration in social habits that low-sodium diets necessitate, most physicians believe that they should be used only in patients who fail to respond to drugs alone. The low-salt diets may be dangerous when renal function is seriously impaired, for diseased kidneys frequently do not conserve sodium, and low-salt syndromes may develop. This threat is not serious if azotemia is absent. To about 10 per cent of our hypertensive patients, we recommend a low-salt diet with 200 mg. of sodium.

SURGERY

Sympathectomy for hypertension has been employed less often since the advent of the blocking drugs, which are capable of producing complete but reversible sympathetic interruption by means of total autonomic ganglionic blockade. Yet the surgical procedure is a practical and at times a worthwhile method of lowering blood pressure, and of delaying the progress of hypertensive vascular disease. There is much difference of opinion concerning the optimal extent and the utility of the procedure, the method of selecting patients for it, and the age at which it should be done.[25] Smithwick's group[5] has presented data which indicate that thoracolumbar sympathectomy prolongs life in moderately severe cases of hypertension, but not in very mild or very severe ones. It has been demonstrated repeatedly that sympathectomy of any type improves the response of patients to hypotensive drugs and dietary therapy.

We have continued to employ thoracolumbar sympathectomy for selected hypertensive patients. Chief among them are those with severe hypertension who are too irresponsible or unintelligent to manage a personal program of ganglionic blocking therapy. We also recommend sympathectomy at times for very young patients with severe hypertension, for we feel that their treatment can be made simpler, less expensive and perhaps safer if such an irreversible surgical measure is employed early in their clinical course. Because we have had unfortunate results with sympathectomy in patients with severe arteriosclerosis, we avoid this approach in them and in elderly patients whose life expectancy probably does not justify

such a painful and formidable type of treatment. As we develop more confidence in and knowledge of the drugs, it is our tendency to perform fewer and fewer of the operations.

SUMMARY

The newer antihypertensive drugs are impressive in their ability to lower blood pressure, to alter the course of severe and malignant hypertensive disease, and to combat arteritis and congestive heart failure. There is no convincing evidence that any drug or combination of drugs is of great value in the mild hypertensive patient, although they may lower blood pressure over long periods of time. In malignant hypertensive patients these drugs give more predictable results than has any previous type of treatment, and in the absence of uremia can be expected to improve the course of the disease.

There are major objections to the use of these drugs. Many of them have undesirable side effects closely allied to the mechanism by which they lower blood pressure. Others have frequently associated toxic effects which at times may endanger the patients. Likewise, these drugs must be very carefully controlled, and most of them must be given in divided doses over 24 hours. None of them, so far as we know, actually treats the cause of essential hypertension. Their considerable cost is a factor that limits their usefulness. They do not have any direct effect on the companion problem of arteriosclerosis, which will probably become increasingly important in these patients as some of the acute effects of their high blood pressure disappear.

Until definite information has been gained concerning the etiology, classification and life history of hypertensive disease, management of these patients must of necessity be imperfect. Nevertheless, the methods of lowering blood pressure that are available today represent a significant advance over those available in the past. Despite the fact that there are many differences of opinion concerning the indications for and efficacy of specific programs, there is general agreement that the drugs have resulted in control of many of the severe complications seen in hypertensive patients. This certainly justifies their continued considered use.

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AAGP SUPPORTS BRITISH COLLEAGUES

Pointing out that the British medical care plan has failed miserably and has put medicine on a mass-production basis, the American Academy of General Practice has urged British family doctors and specialists to resign from the National Health Service. The statement was issued by Dr. Floyd C. Bratt, Rochester, New York, chairman of the Academy's Commission on Public Policy.

In 1951, the NHS arbitrarily decided that all family doctors in England should earn the equivalent of $6,200 a year. Since then, the cost of labor has risen 35 per cent, and though the doctors have asked for no more than a 24 per cent increase, the government has offered them a token 5 per cent raise.

Reports that British physicians are planning to strike are misleading, Dr. Bratt pointed out. The doctors plan simply to resign from NHS, thus returning to fee-for-service practice. Instead of billing the government, they will then bill each patient. To be effective, the move will, of course, have to be made by a significant share of the English doctors.

The Deceptiveness of Intestinal Strangulation

HERBERT H. KERSTEN, M.D.

FORT DODGE

A 36-YEAR-OLD farm wife who was 8½ months pregnant had been having episodes of cramping abdominal pain for one month. They had developed gradually, and though they had not been disabling and had not been associated with nausea, vomiting, bleeding or change in bowel habits, they had occurred every day.

She had been referred to us 10 hours after developing generalized abdominal pain of increased intensity. After the onset of the pain, she had eaten breakfast and had had a normal bowel movement. A few hours later she had vomited several times. Prior to her admission, she had been given intravenous fluids and an enema, but her cramps persisted. *At no time had she felt seriously ill.*

The patient's past medical history was significant. In 1948 she had had a uterine suspension in another city, and a few days postoperatively she had developed intestinal obstruction and had had to be reoperated upon. For three years thereafter she was well; indeed she carried and delivered twins uneventfully in 1950. In 1951, however, an acute intestinal obstruction was relieved by dividing adhesive bands, and the surgeon cautioned her against another pregnancy, predicting that she would "never live through it," presumably because of the dense adhesions that he had encountered. Nevertheless, she had become pregnant again, and had had no trouble until four weeks before we saw her.

DOWNHILL COURSE

On admission, the patient was moderately dehydrated, although not vomiting. Gastric suction recovered only a small amount of bile-colored liquid. She was mildly apprehensive and restless, and her temperature was 97.6° F. Her pulse rate was 120 beats per minute, a rather disturbing finding, and her blood pressure was 124/72 mm. Hg. The abdomen contained a near-term pregnancy, and fetal heart tones could be heard in the left lower quadrant. There was a non-tender, low midline abdominal scar. There was questionable distention in the upper abdomen and mild tenderness to deep pressure throughout the abdomen, but the presence of a near-term pregnancy distorted the



Figure 1.



Figure 2.

abdominal findings. Normal or slightly reduced peristaltic activity was noted. The cervix was effaced, but not dilated, and the patient was not believed to be in active labor.

Plain films one hour after admission showed several gas- and fluid-containing loops in the upper abdomen, and a small amount of gas in the colon (Figures 1 and 2). The radiologist felt that they were probably representative of an incomplete obstruction, but he could not state definitely that the fluid levels were not the result of the enema that had been administered just prior to the patient's admission.

Laboratory studies revealed moderate hemoconcentration, with 16 Gm. of hemoglobin and 5,000,000 red cells. The white cell count was 11,250, with 78 polymorphonuclear cells. The urine was unremarkable, except for 1+ sugar, presumably the result of the administration of intravenous fluids.

It was concluded that the patient had a bowel obstruction, though probably an incomplete one, in view of the gas shadows in the colon. Bowel strangulation was considered, but it was thought unlikely, for the patient's course had been relatively benign. Some consideration was given to the possibility of passing a long tube in anticipation of an early labor and delivery, but it was concluded that the rapid pulse contraindicated nonoperative management.

Three hours after admission, it was decided that additional intravenous fluids should be given, that the abdomen should be explored and, possibly, that a cesarean section should be performed. The patient was scheduled for operation, her blood was cross matched, and she was given 100 mg. of Demerol at about this time for pain and restlessness.

Shortly thereafter, the patient's membranes ruptured. She was reexamined and found to be in clinical shock, very apprehensive and in serious condition. This change in her status had occurred within no more than 45 minutes.

She was taken to the operating room, and blood was started under pressure. It was then obvious that the patient had a far-advanced intestinal strangulation and was moribund. In an effort to save the baby, the abdomen was opened through a low vertical incision under local and light general anesthesia. Several adherent loops of essentially normal bowel were freed from the uterus, and a classical section was carried out. The child was stillborn. The mother's condition was terminal, although a pulse could still be obtained.

With the uterus emptied, numerous loops of completely gangrenous bowel could be seen in the right upper abdomen, where they had become encircled by a tight band of omentum that extended from the transverse colon to the region of the right tube and ovary. The upper small bowel was rapidly mobilized and resected while a second cutdown was done and additional blood was started under pressure (Figure 3). The usual stimulants were administered, but the patient died on the table as the result of shock secondary to an extensive strangulation of the small bowel. Impending strangulation had been considered, but relatively benign clinical manifestations had masked its massive extent and advanced state.

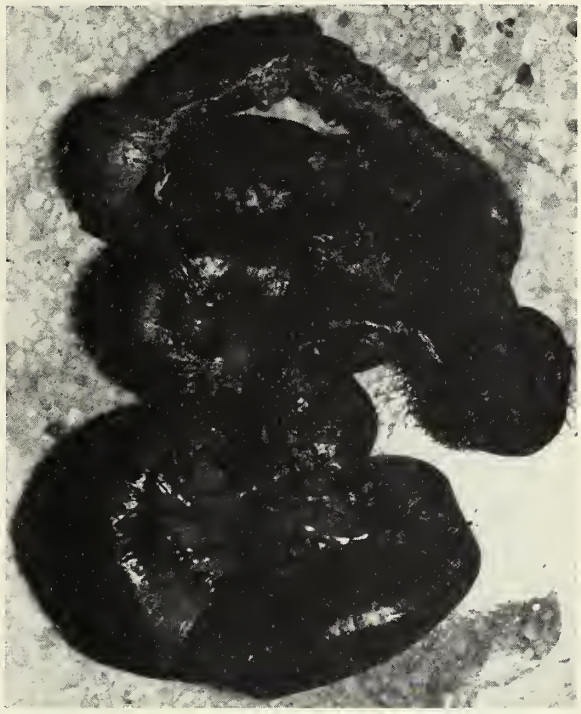


Figure 3. Upper small intestine in case under discussion.

This patient had been the mother of four small children. Her course was a particularly unfortunate example of the deceiving nature of certain intestinal strangulations.

THE DIFFICULTIES OF DIFFERENTIAL DIAGNOSIS

Wangensteen has noted that "what is decided early in the course of an acute abdominal disorder is in large measure the most important determinant of the outcome." This is particularly true of massive small-bowel strangulations. He has also observed that there are no absolutely reliable criteria by which one can distinguish the urgent strangulating obstructions from the much less pressing simple varieties. He and other authors have reviewed large series of cases and have tabulated general observations on the respective clinical courses of the two varieties. Their findings are valuable aids in handling these problems. *Strangulation of the intestine is an urgent intra-abdominal emergency.* Both simple and strangulating obstructions may result from essentially identical mechanical causes. The two types share certain clinical manifestations—particularly pain, vomiting, dis-

tention and disturbed function of the bowel. In the strangulating variety, there are also impaired blood flow and impaired viability, or even frank gangrene of a variable amount of bowel wall. The most important feature which serves to differentiate extensive strangulation of the bowel from other varieties of obstruction is massive blood loss, primarily into the bowel lumen.

Unfortunately, the clinical differentiation of the two types is not always a simple matter, for they share many symptoms and findings. Some cases may progress imperceptibly from one classification into the other.

WORDS MISLEAD US

We are unwitting slaves to custom in our use of words. Very frequently, words distort the concepts that they are intended to delineate. I believe this is true of the terms *simple obstruction* and *strangulating obstruction.* "Bowel strangulation" and "bowel obstruction" are basically *different* entities, and it would be far better for us to accustom ourselves to the idea that bowel obstruction can occur either with or without the far more urgent condition of bowel strangulation. Much danger derives from our unconscious tendency to think of these entities as merely two *varieties* of bowel obstruction.

Bowel obstruction *with strangulation* is an urgent intra-abdominal emergency. When it involves a significant segment of intestine, it may be associated with massive blood loss and shock. There are degrees of involvement, of course. Extensive mesenteric thrombosis is obviously more urgent and shock-producing than is local necrosis of a few centimeters of bowel in a strangulated femoral hernia. In general, blood loss and shock will parallel the extent of involvement.

Extensive cases of intestinal strangulation must be treated with the same urgency that we accord to other active intra-abdominal bleeding, such as that associated with traumatic rupture of the spleen. Only when intestinal strangulation is dealt with in this manner will the associated high mortality rate be reduced.

In order to treat intestinal strangulation promptly with transfusions, suction and immediate surgery, we must first suspect and identify it. Unfortunately, bowel strangulation may masquerade in many costumes. In unusual instances, the symptoms and findings are obscured by, and intertwined with, those of the coincidental obstruction. Strangulation may develop as a primary condition, as in mesenteric thrombosis. It may develop in association with mechanical obstruction, as in volvulus or encirclement by adhesive bands. Or it may develop insidiously in protracted paralytic ileus.

In approximately one out of 20 cases that present as intestinal obstruction, there will ultimately prove to be intestinal strangulation as well. There have been many classic delineations of the clinical patterns of these conditions, and as a result, the examiner should be able to identify strangulation in most instances.

Wangensteen says, "The patient's general appearance, the state of his nutrition, his countenance, and the expression of the eye, the color, moisture, warmth and turgor of his skin, the quality of the pulse, and the character of the respiration are significant matters which serve to orient quickly the seasoned examiner concerning the general condition of the patient. Cold extremities should alert the examiner to the presence of a situation causing peripheral constriction of the blood vessels. . . . A composed face affords the examiner considerable reassurance. Still, behind the mask of a stoic mein, much may be hidden. . . . A very rapid pulse is followed almost invariably by a blood pressure which tends to fall to shock level."

Reinus, in reporting a study at Lenox Hill Hospital, in New York City, has stressed the following as significant of strangulation in the presence of obstruction: the sudden onset of steady abdominal pain, a general clinical appearance of serious illness, temperature above 101° F., and a pulse above 110. Fever of this degree was present in only 1 per cent of simple obstructions, but in nearly half of the obstructions with strangulation in his series. He found a pulse of over 110 in only 1 per cent of simple obstructions; but it was present in 75 per cent of the cases that had actual strangulation.

Evans has stressed the importance of severe, steady pain, usually with sudden onset and without free intervals. He has been impressed by the occurrence of frequent severe vomiting in his patients with strangulation. Many of his patients seemed clinically "serious," and he has noted that some felt less uncomfortable when they assumed a certain body position which he termed the "position of relief." Restlessness, elevation of the pulse, and shock were also impressive in his series. He has stressed the great value of rapid and massive blood replacement—as much as 2,000 cc. in such patients. He emphasizes the urgency of surgery, with delay "only for the proper treatment of shock." Of his cases, 10 out of 16 died. Of eight patients who showed signs of shock when first seen, not one recovered. It has been noted that a delay of even six hours may be followed by death.

Crowley and Winfield, in a collective review in the INTERNATIONAL ABSTRACTS OF SURGERY, point out that errors in the diagnosis of bowel strangulation arise from several sources. The cause of the obstruction is usually concealed. There is no single pathognomonic sign by which strangulation can be absolutely identified. And there are many other acute abdominal disturbances with which the condition may be confused. Most authors agree that the great majority of cases can be recognized preoperatively, if the available diagnostic criteria are

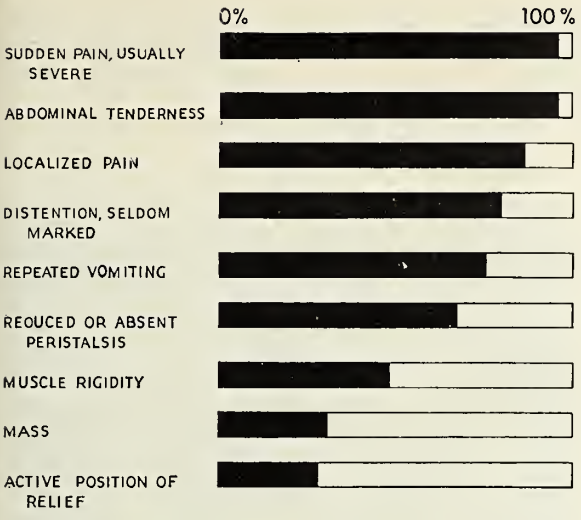


Figure 4. Signs and symptoms of intestinal strangulation in 100 cases reported by Harold P. Totten.

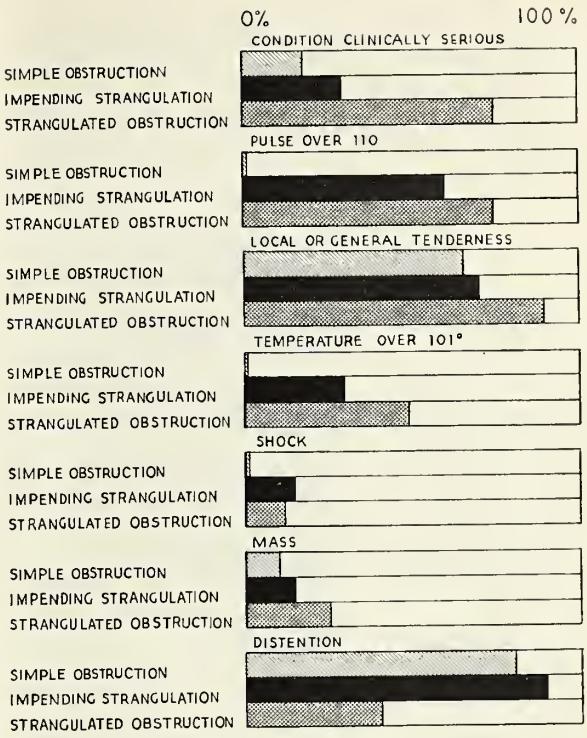


Figure 5. Findings in cases of intestinal obstruction reviewed by Reinus at Lenox Hill Hospital, New York City.

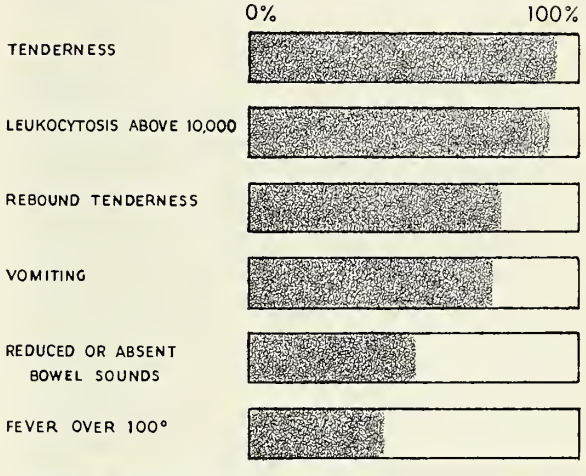


Figure 6. Findings in intestinal strangulation as observed by Wangensteen, University of Minnesota.

carefully searched for and interpreted. Crowley and Winfield, however, say, "It is surprising to note in how many instances of severe internal strangulating obstructions the usual abdominal signs indicating an acute intra-abdominal lesion obtained by the usual basic methods may be vaguely developed or even absent." Together with other authors, they suggest the use of peritoneal needling as a useful diagnostic test. Bloody fluid may usually be obtained a few hours after onset by means of a minute or two of suction through a small intraperitoneal aspirating needle. They advocate ". . . the general precept of immediate operation while the usual measures for correction of the patient's circulatory depression are in progress. . . ." They feel that this attitude should prevail for all positive and doubtful cases.

Wangensteen has done extensive experimental work in intestinal strangulation, and he has found that ligation of the mesenteric veins without disturbance of the arteries is much more rapidly fatal than ligation of artery alone, or artery and vein together. In one dog, death from shock occurred one hour after ligation of the superior mesenteric vein. Occlusion of the venous return from four or five feet of bowel was uniformly fatal in four hours, whereas dogs were often able to survive artery or artery *and* vein ligation for 20 hours. Under these experimental conditions, dogs lost as much as 50 per cent of their circulating blood volume in a few hours. The involved loops of bowel became engorged and filled with bloody fluid. At a later stage, the wall became necrotic, permitting the escape of pathogenic bacteria.

It should be noted that many intestinal strangulations in human beings result from volvulus or encircling bands which tend to cause what is essentially a venous occlusion.

Figures 4, 5 and 6 graphically summarize certain of the clinical findings in published series of intestinal obstructions.

I should point out, however, that these charts introduce a peculiar distortion into our thinking. Patients are rigidly classified as having a particular symptom or not having it at all. The charts, that is to say, imply an "all or none" state which does not exist. In actual practice, the symptom or finding may be found in a wide range of shadings. If we remember this shading as we examine our patients, we shall be more acutely aware of the

wide variations in symptomatology that may exist. If we are guided entirely by conventional charts, we may overlook many cases in which the clinical picture is poorly developed.

To demonstrate this point more graphically, Figure 7 attempts to indicate the shading of symptoms as they occur clinically. Thus, most patients have

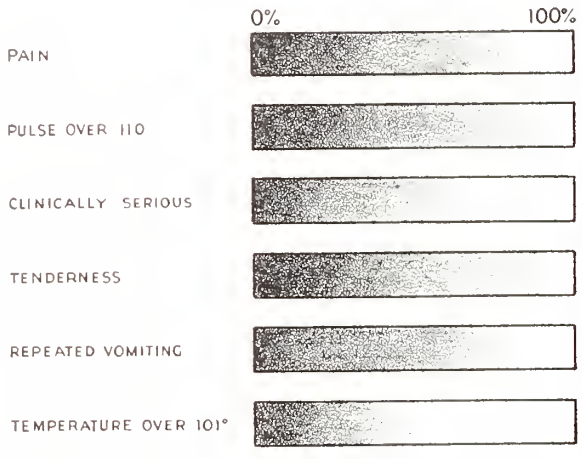


Figure 7. Shading of major signs and symptoms in intestinal strangulation case series.

considerable pain, a few have unimpressive pain and a small minority have no pain at all. If we are always aware of this shading, we shall be able to make earlier and more accurate diagnoses.

SUMMARY

A case of fatal intestinal strangulation complicating pregnancy has been reviewed.

The distinctly different nature of the two entities "intestinal obstruction" and "intestinal strangulation" has been emphasized. The variable intensity of symptoms and signs has been discussed.

It has been suggested that the term *strangulating obstruction* be discarded, and that the more precise and discriminating term *intestinal strangulation* should be generally adopted in surgical parlance.

Massive intestinal strangulation is associated with extensive blood loss and shock. All patients with intestinal obstruction must be scrutinized for evidence of intestinal strangulation.

Suspected cases of intestinal strangulation must be treated with the same urgency that is customarily accorded to other varieties of active intra-abdominal hemorrhage.

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MISSISSIPPI VALLEY HEART COUNCIL



Officers of the newly established Mississippi Valley Heart Council are, from left to right, Dr. Wiley Griffith, chairman; Dr. Harry B. Weinberg, vice-chairman; and Dr. William Province, secretary.

The doctors of five eastern Iowa counties were well represented in Clinton on May 10 at the organizational meeting of the first regional Heart Council in Iowa. The multi-county grouping is intended principally to sponsor scientific programs for physicians, and is a new type of subdivision for the Iowa Heart Association. Previously, the units composing the state organization have been the 68 county chapters.

Dr. Wiley Griffith, of Clinton, was named chairman, and Dr. Harry B. Weinberg, of Davenport, was elected vice-chairman. The secretary is Dr. William Province, of Dubuque, and the treasurer is Eugene Glickman, a Davenport layman.

Dr. Weinberg, who is a past-president of the Iowa Heart Association, outlined the organizational structure on all levels, and Mr. Lloyd Wagnon, executive director of the IHA, presented a number of activities for the consideration of the new group. A surprise move at the meeting was the presentation of a medallion for distinguished service to Dr. Weinberg.

MEDICARE I-D CARD POSTPONED

Doctors and hospital administrators cannot expect Medicare beneficiaries to present their Form 1173 identification cards before January, 1958, rather than in July, 1957, as previously announced. The Defense Department has decided to issue an all-purpose card for use at commissaries, post theatres, etc., as well as for medical services. In consequence, a six-months delay has become necessary.

Factors Involved in Mortality of Acute Myocardial Infarction

ELLSWORTH L. LINDLEY, M.D., AND BEN F. WOLVERTON, M.D.

CEDAR RAPIDS

ANTICOAGULANTS HAVE been used in Cedar Rapids hospitals since 1946, when prothrombin determinations first became sufficiently reliable for clinical use. They have been most frequently used in the management of acute myocardial infarction, and until we undertook the present study, it was assumed that they were reducing both the mortality and the incidence to a degree comparable with that which the American Heart Association reported in 1946.[1] In that study, the mortality in the treated group was approximately 16 per cent, in contrast with 23.4 per cent in the control group, and the incidences of thromboembolism were 23 per cent among the treated cases and 42 per cent among the controls. In Cedar Rapids, however, the numbers of fatal cases of acute myocardial infarction reported by pathologists at our staff meetings, month after month, led us to suspect that the mortality might be greater than that which the American Heart Association was finding. Accordingly, we decided to analyze all the cases of this condition which had been treated at St. Luke's Methodist Hospital during the years 1952 and 1953.

St. Luke's is a general hospital of 311 beds, with an open staff consisting of 143 specialists and general practitioners. During the two years covered by our study, there were five internists on the staff who were wholly or principally responsible for the management of 55 per cent of the cases studied, and 35 general practitioners who cared for the remaining 45 per cent. A total of 278 patients admitted during 1952 and 1953 were diagnosed by their respective physicians as having acute myocardial infarction, coronary thrombosis or acute coronary occlusion. Both of us collected and individually reviewed their records. For the purposes of our study, we excluded those who, in our combined judgment, had not shown convincing evidence of myocardial infarction, and analyzed the remainder, all of which showed characteristic electrocardiograms or positive necropsy findings, or both, and other supporting clinical features, 154 cases in all.

Of the 124 patients whom we excluded, not a few, we were convinced, actually had had myocardial infarctions, but the evidence that had been secured was either fragmentary or inconclusive. Most often the history, the physical findings or the progress notes were incomplete, or perhaps only a single equivocal electrocardiogram had been recorded, or none at all. At times we disagreed with the interpretations of the tracings, and in some instances one or the other of us had interpreted them. Every effort was made to apply the same criteria to all cases, and we neither accepted nor excluded any case unless we were in agreement regarding it. Obviously, the exclusion of cases that probably were myocardial infarction affected the mortality rate for the series, since the mortality rate for the excluded cases was much lower than for the included ones.

Furthermore, in the series analyzed, there were a number of cases in which the presence of acute myocardial infarction was not recognized clinically, but was proved at necropsy. In consequence, the mortality percentage in the studied group was raised. If necropsies had not been done in those cases, the diagnosis would not have been made at all, and they would not have been included in the study. It is impossible to estimate how much lower the mortality rate would have been if we had been able to determine with certainty the number of patients who actually had myocardial infarction, but it would have been definitely lower. Of the 154 cases included in the study, 103 survived and 51 died. Thus the mortality rate was 33.1 per cent. The deaths include all those who were admitted to the hospital. The few patients who were dead on arrival were excluded. This mortality rate, naturally, was rather shocking, since it corresponds closely to the usually accepted figure for cases treated without anticoagulants. When we had computed it, we were more anxious than ever to determine, if possible, why the overall death rate was so high.

Master sheets were prepared, and on them we recorded, for each case, all the data which we thought were pertinent to death or survival. These included the hospital case number; the age; sex; history of one or more previous myocardial infarctions; previous congestive failure; antecedent hypertension; diabetes mellitus; obesity; other coexistent diseases such as anemias, nephritis or syphilis; the presence of cardiac arrhythmias; cardiac drugs employed, their indications and dosages; oxygen administration; the day of the disease on which the patient was admitted; total

days in the hospital; the electrocardiographic localization of the infarct; degree of leukocytosis; the maximum and final sedimentation rates; the postmortem description of the infarct; and the name of the attending physician. The anticoagulants were recorded, if any had been used, but patients who received them for less than 48 hours were not included in the "anticoagulant-treated" group, for Dicumarol had been used almost exclusively, and this drug is not effective until after 48 hours. Taking 10-30 per cent prothrombin value as the effective therapeutic range, we rated the prothrombin control as "good" (90 per cent determinations within the therapeutic range), "fairly good" (80 per cent), "fair" (66 per cent), and "poor" (less than 66 per cent).

We encountered a number of difficulties in assembling the data. The incompleteness of many records has been mentioned. Often, the nurses' notes gave more information than the physicians'. Commonly, oxygen was started and discontinued on verbal orders, and one could not tell from the nurses' notes how long it was given. In many instances, two or more physicians shared responsibility for the patient's care, and it was difficult or impossible to decide who carried the major responsibility. Frequently, there was nothing on the chart to show what the indications had been for certain therapeutic measures which were instituted. Conversely, there often seemed to have been definite indications for treatment that was not applied. Often, arrhythmias were mentioned in the nurses' notes or recorded in the EKG's, but were not mentioned in the progress notes. Of course, we could record only such facts as were on the records.

After all of the available data had been entered on the master sheet, the various factors which seemed to have had a bearing on the outcome of the case were studied separately. The mortality rate in the cases not given anticoagulants was compared with that in the group that had been treated with anticoagulants for 48 hours or more. The whole group was broken down as to age and sex. The influence of the various so-called "bad risk" features was studied, viz, shock, previous myocardial infarction, previous congestive failure, arrhythmias, obesity, diabetes or other coexistent diseases. An attempt was made to determine the effect, if any, of quinidine given as a prophylactic agent against dangerous arrhythmias, and of digitalis, when used. The cases of patients who had survived less than three days after admission were scrutinized in detail for indications of whether they might have survived if they had been treated differently. Two physicians who had cared for a considerable group of patients jointly had had a somewhat higher mortality rate than might have been expected. Their fatal cases were gone over a second time, on the chance that they may have had an unusual number of "bad risk" patients.

RESULTS

Of the 154 cases, 120 occurred in males and 34 in females, making the ratio of males to females 3.5:1, slightly lower than the ratios reported in other series.[3] The cases represent the total number that occurred on all hospital services (Table 1).

TABLE 1

SEX DISTRIBUTION AND OVERALL MORTALITY

Total cases		154
Males	120	
Females	34	
Ratio of males to females	3.5:1	
Total deaths		51
Mortality rate		33.1%

In the total series, there were 51 deaths, making the mortality rate 33.1 per cent. These figures represent the total number of deaths among all admitted patients who had acute myocardial infarction, regardless of the day of illness on which the patients died. Only those who were dead on arrival were excluded. Of the individuals who were dead on arrival at the hospital, the number who had died from acute myocardial infarction could not be determined accurately.

The numbers of cases occurring in the various decades are shown in Figures 1 and 2. Almost equal numbers of patients were in the fifth, sixth and seventh decades, there being 42 each in the fifth and sixth, and 43 in the seventh. Of the 103 survivors, the greatest number were in the fifth and sixth decades. In the series of 51 fatal cases, the largest number were in the seventh decade. Of special interest were the 19 patients with acute myocardial infarction between 30 and 49 years of age.

A total of 105 patients received anticoagulant therapy in the form of Dicumarol. An occasional patient received heparin intravenously during the first 24 to 48 hours. There were 85 survivals and 20 deaths in the anticoagulant-treated group. Of the 85 living cases, 30 had "good" or "fairly good" prothrombin-time control, and of the 20 who died, only five had had "good" control, and none had had "fairly good" control. In the living group, 55 had only "fair" or "poor" control, and 15 of the 20 deceased patients had had "fair" or "poor" control. The quality of anticoagulant control is summarized in Table 2.

The mortality rate for the anticoagulant-treated group was 19 per cent, and that for the non-treated group was 63.2 per cent.

Other factors which might influence the mortality rate were studied. Vasodilator drugs, including aminophylline, papaverine and Peritrate

TABLE 2
QUALITY OF ANTICOAGULANT CONTROL

	Living	Deceased
Good control	23	5
Fairly good control	7	0
Fair control	39	5
Poor control	16	10
Total patients	85	20

were used in such varying dosages and periods of time that no conclusions could be reached concerning their relative efficiency or lack of it. There was no prognostic significance in the degree of fever, leukocytosis or elevation of erythrocyte sedimentation rate. More than half the recovered patients had abnormally high sedimentation rates at the last recording before their discharge from the hospital. Obviously, a normal sedimentation rate was not regarded as a prerequisite for discharge.

Some patients were routinely given quinidine as a possible prophylactic measure against the development of serious arrhythmias. Among the cases that received quinidine, there were 12 deaths (24 per cent). Among the cases that were not given quinidine, there were 40 deaths (37 per cent). This suggests that the prophylactic use of quinidine for the prevention of serious arrhythmias, especially ventricular tachycardia and ventricular fibrillation, may be valuable, but perhaps the difference in rates is not significant, since factors other than arrhythmias were also responsible for mortalities.

Digitalis was used in the more severe cases of congestive heart failure, but no conclusions could be reached regarding the benefit or possible harm that may have resulted.

The incidences of various complications occurring during the course of the disease—namely shock, congestive heart failure and arrhythmias —are shown in Tables 3 and 4. Shock or congestive heart failure occurred more frequently in the patients who subsequently died than in those who recovered. Roughly, the total number of arrhythmias in the patients who afterwards died was double that which occurred in the patients who survived.

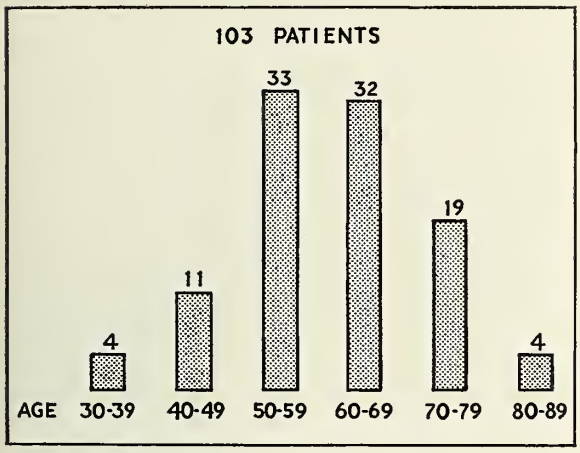


Figure 1. Living cases by age groups.

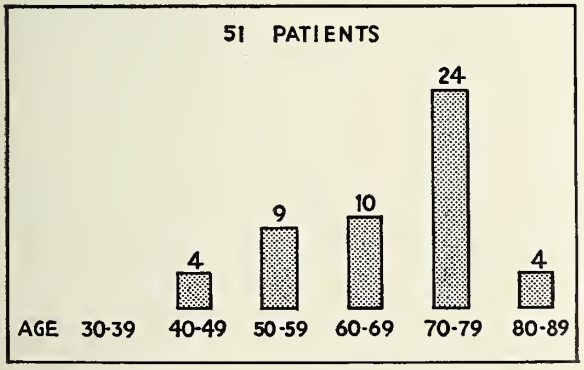


Figure 2. Mortalities by age groups.

TABLE 3
SHOCK AND CONGESTIVE HEART FAILURE

	Shock		Congestive Heart Failure	
	Number	Per Cent	Number	Per Cent
Deceased	9	17.3	8	15.3
Recovered	4	3.8	4	3.8

TABLE 4
ARRHYTHMIAS

	Patients Deceased	Patients Recovered
Ventricular premature systoles	8	6
Ventricular tachycardia	2	2
Nodal premature systoles	1	0
2:1 A-V block	0	1
Sino-auricular block	1	0
1° A-V block	2	1
Complete A-V block	1	2
Auricular fibrillation	3	4
Auricular tachycardia	1	1

A study of coexisting diseases revealed that the commoner ones were essential hypertension, diabetes mellitus and obesity. Miscellaneous illnesses occurring in conjunction with acute myocardial infarction included a wide variety of entities—leukemia, cholelithiasis, duodenal ulcer with hemorrhage, carcinoma of the stomach, and bladder-neck obstruction due to prostatic hypertrophy. These are shown in Table 5. Diabetes mellitus and obesity were more frequent in patients who died than in those who survived. Essential hypertension, however, was more common in the recovery group than among the patients who died, and in itself did not adversely affect the mortality. The total incidence of all coexisting diseases in the group of patients who died was

TABLE 5

COEXISTING DISEASES

	High Blood Pressure		*Diabetes Mellitus*		*Obesity*		*Other*		*None*	
	Number	*%*	*Number*	*%*	*Number*	*%*	*Number*	*%*	*Number*	*%*
Recovered	33	60	4	37	9	41	4	17	90	85
Deceased	22	40	7	63	13	59	20	83	16	15

85 per cent, and was only 15 per cent in the recovery group.

The location of the myocardial infarction was predominantly anterior (67.2 per cent in the deceased and 46.5 per cent in the recovery group). These findings are shown in Table 6. The patients having anterior myocardial infarction had the higher mortality rate, but the difference was not great.

TABLE 6

LOCATION OF INFARCTS

	Anterior		*Posterior*		*Sub-endocardial*	
	Number	*Per Cent*	*Number*	*Per Cent*	*Number*	*Per Cent*
Recovered	48	46.5	51	53.4	4	3.8
Deceased	35	67.2	17	32.6		

The incidence of previous attacks of acute myocardial infarction adversely affected the mortality rate, as is shown in Table 7. Previous attacks had been three times as numerous in the patients who died as in those who recovered.

TABLE 7

PREVIOUS ATTACKS OF MYOCARDIAL INFARCTION

	Number	*Per Cent*
Recovered	7	6.7
Deceased	10	19.2

A review of the deaths that occurred more and less than three days following the patients' admission to the hospital revealed a number of situations that might have been managed differently, possibly with a reduction in mortality. Of the two patients with rupture of the left ventricle, one was mentally disturbed. This type of person must be carefully controlled. Three of them had diabetes mellitus, and excessive dosage of insulin had produced hypoglycemia, a fact that may have had some bearing on the fatal outcome. Difficulties in the diagnosis of acute myocardial infarction when the electrocardiogram was not diagnostic may have increased the mortality rate, for a time-consuming differential diagnosis of the acute upper abdominal symptoms had to be carried out. In at least one instance myocardial infarction occurred during surgery in a patient who had a negative preoperative history of coronary artery disease, had had a normal preoperative electrocardiogram, and had had an uneventful anesthesia, with no detectable period of anoxia, rhythm disturbance or drop in blood pressure. The possible factors influencing mortality, some of which might have been preventable or correctable, are shown in Tables 8 and 9.

TABLE 8

CORRECTABLE FACTORS THAT MAY HAVE BEEN RESPONSIBLE FOR DEATHS WITHIN THREE DAYS AFTER ADMISSION

1. Quinidine, grs. III q 3 hrs., with QRS of 0.12
2. Excess insulin dosage (two patients)
3. Infarct during surgery (negative preoperative EKG)
4. Intravenous administration of 2,000 cc. dextran in saline within 1½ hours
5. Gastric tube and intravenous fluids following diagnosis of case as duodenal ulcer with perforation
6. Patient's refusal to accept standard treatment, following office diagnosis of acute myocardial infarction.

TABLE 9

CORRECTABLE FACTORS THAT MAY HAVE BEEN RESPONSIBLE FOR DEATHS MORE THAN THREE DAYS AFTER ADMISSION

1. Failure to keep two patients quiet may have been responsible for ruptures of left ventricle. One of them was a disturbed patient.
2. Diuretic measures may have been used so vigorously as to produce dyspnea in one patient.
3. A dyspneic patient was subjected to two gallbladder series. EKG had not shown an infarct.
4. In a diabetic patient, a postoperative infarction may have occurred when blood sugar declined to 33 mg. per cent.
5. Suction was applied for abdominal distention. EKG had not been diagnostic, but the autopsy showed acute infarction.
6. Digitalis was administered, though the chart showed no indication for it.

The incidence of thromboembolic phenomena in the 154 cases of this series could not be accurately determined because some of the progress notes were incomplete. A study of the deaths, however, indicated that the factors discussed in the previous paragraphs played the major role in the mortality. Even in the autopsied cases, the deaths could not be attributed to thromboembolic phenomena. Even when thromboembolic findings such as mural thrombi, small pulmonary infarctions and peripheral venous thromboses were found in the autopsied cases, they did not appear to have been the cause of death.

DISCUSSION AND SUMMARY

The purpose of this study was to determine the factors concerned in the immediate prognosis of

acute myocardial infarction occurring in hospitalized patients. The usual duration of hospitalization was from three to six weeks.

An attempt was made to learn the true seriousness of the disease. Therefore, patients who had died within 24 to 48 hours after reaching the hospital were not excluded. Only the few cases that were dead on arrival were disregarded, and we ruled them out only because of insufficient data. This extraordinary inclusiveness may be one of the factors responsible for the fact that our mortality rates (63.2 per cent for the group not given anticoagulants and 19 per cent for the anticoagulant-treated group) are higher than those reported by Wright (23.4 per cent within six weeks for the control group and 16.0 per cent for the anticoagulant-treated group). Our overall mortality rate of 33.1 per cent under two months is still higher than the 27.6 per cent reported by Katz in his series of 572 cases in which no anticoagulant therapy was used and in which deaths under 48 hours were not excluded.[2]

The quality of prothrombin-time control in our series left much to be desired, since only 30 of the 85 patients who survived had "good" or "fairly good" prothrombin-time control, and only five of the deceased had either "good" or "fairly good" control. The quality of anticoagulant therapy may have had some bearing on the mortality rate, although the series is not a large one.

The immediate mortality rate in females was 47.0 per cent, and in males 29.1 per cent. The higher mortality in women is in accord with reports of other series. The age incidence in our series was similar to that generally encountered.

Previous myocardial infarction adversely affected mortality. Percentagewise, the incidence of previous infarction was three times as great among the patients who died as among the ones who survived, being 19.2 per cent and 6.7 per cent respectively. Likewise, the incidences of shock, cardiac arrhythmias and congestive heart failure were higher in the patients who died.

Hypertension had little effect on the immediate mortality rate. The presence of other diseases, obesity and diabetes mellitus was more frequent in the patients who subsequently died, and such a complication can be said to lessen the chances of the patient with acute myocardial infarction.

The use of various drugs seemed to have little effect on the mortality. The more commonly used vasodilators had been prescribed, and no conclusions could be reached as to their effect, if any, on the death rate. There was suggestive evidence that the routine use of quinidine might be valuable in the prevention of the more serious arrhythmias, especially ventricular tachycardia and ventricular fibrillation.

Certain prophylactic or remedial measures might have reduced the mortality rate. Disturbed patients must be kept quiet, for the incidence of rupture of the myocardium is higher in such persons than in others. In three diabetic patients, excessive insulin dosage with marked hypoglycemia appeared to have been an important factor. Other contributory causes of death were rapidly administered intravenous infusions; confusion in diagnosis when the symptoms of acute myocardial infarction were chiefly upper abdominal; employment of vigorous diagnostic procedures in patients having acute cardiac symptoms; and the patient's refusal to follow instructions regarding rest during the initial phases of acute myocardial infarction. Thromboembolic disease was not an important factor in the mortality.

CONCLUSIONS

We have presented a study of the factors involved in the immediate deaths of 154 patients with acute myocardial infarction occurring in a general hospital.

Factors having a direct bearing on mortality, as shown by this review, are (1) age of the patient; (2) diabetes mellitus; (3) obesity; (4) previous myocardial infarction; (5) the development of serious arrhythmias; (6) shock; (7) congestive heart failure; and (8) coexisting major diseases. The mortality was considerably higher in women. In this series, the anticoagulant-treated group had a lower mortality than the non-treated group. This difference could not be attributed to the presence or absence of thromboembolic processes.

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NEW TB DRUG

Streptovaricin (Dalacin, Upjohn) is a new antibiotic developed by the Upjohn Company for use in combatting tuberculosis. According to the firm's investigators, it is 10 times as active as streptomycin and 100 times as active as para amino salicylic acid (PAS), two of the drugs now widely used in tuberculosis therapy, but it is only half as active as another widely used agent, isoniazid.

Other animal studies of the drug by a research group at New York Hospital-Cornell Medical Center, resulted in the report that the new antibiotic showed a remarkable ability to potentiate the striking power of isoniazid in attacking the tubercle bacillus. Thus, it may in the future replace streptomycin and PAS as the companion drug for use with isoniazid.

Cerebral Angiography in the Diagnosis of Vascular and Neoplastic Diseases

WALTER D. ABBOTT, M.D.

DES MOINES

The history of cerebral angiography has been well written, and it is unnecessary that I review the literature at the present time. The purpose of this paper is to encourage more adequate therapy by presenting a clinical review of the various lesions that can be visualized by appropriate angiography.

TRAUMATIC LESIONS

Subdural hematoma cannot always be clearly identified. This is particularly true in patients of the older age groups that are known to be suffering from hypertension. In diagnosis, angiography may be a valuable adjunct to clinical findings and pneumography.

Thrombosis of the common carotid artery seldom results from trauma, but I recall seeing a traumatically produced lesion of that sort when I was serving with the Navy in the South Pacific during World War II.

A young lieutenant had been felled by gunfire when his patrol was surrounded by Japanese, and he had lain in the sun for six hours before being brought to a forward aid station. The lieutenant had a small punctate wound in the right neck and was comatose, with evidence of a left hemiplegia and positive left Babinski. The attending surgeon explored the wound in the neck and found a piece of dried, brown leather belt that had been blown into the neck and had formed a half-collar around the common carotid artery. It was removed, and there was no evidence of bleeding. I was asked to see him in consultation two hours later, but just as I arrived, he expired. Autopsy revealed an infarction of the right cerebrum, with a thrombosis of the right common artery from the cuff of dried belt that had been blown into the neck.

Such a condition must be borne in mind, although it seems unlikely to occur in civilian life.

Arterio-venous aneurysm can occur from gunshot wounds of the skull, and angiography is definitely of value in detecting such a condition. Other sorts of injuries can cause it, even a surgical approach to the mastoid region. The patient then develops a typical hissing noise in the head, usually partial third-nerve paralysis, homolateral proptosis and hemicrania. Appropriate injection of a contrast medium into the carotid artery may indicate the size and location of the arterio-venous aneurysm, thus aiding the operator in deciding whether his approach should be an intracranial attack or a ligation of the internal carotid artery in the neck.

NON-TRAUMATIC LESIONS

Aneurysms may be either congenital or arteriosclerotic. *The congenital aneurysm* may not manifest itself until there is a sudden attack of coma, rigid neck and bloody spinal fluid, all of which may or may not be associated with a localizing lesion. As regards treatment for this condition, there are two schools of thought. In cases of spontaneous subarachnoid hemorrhage, bed rest and repeated drainage of the bloody spinal fluid constitute one procedure of choice. However, increasing numbers of neurosurgeons feel that a more aggressive approach should be carried out. If there are localizing signs, sometimes it is necessary to intervene immediately in order to save the patient's life.

I recall one woman who apparently had a spontaneous subarachnoid hemorrhage following the birth of her child. Her respirations were as few as four per minute, and she developed a hemiplegia and appeared to be moribund. Arteriography revealed an aneurysm at the junction of the middle and anterior cerebral arteries, and ligation of the internal carotid artery in the neck was rewarded by complete recovery, even to the extent that the woman went through two subsequent pregnancies uneventfully.

The arteriosclerotic aneurysms usually manifest themselves after the fifth decade, and may or may not be associated with a prodromal syndrome consisting of supra-orbital pain, vertigo and headaches that may or may not be generalized. The sudden onset of hemiplegia may be the first objective finding, and it is usually associated with nuchal rigidity and bloody spinal fluid. Occasionally, the flat plates of the skull reveal an indication of a calcified aneurysm. However, it is usually necessary for the surgeon to resort to carotid angiography to detect the presence of a lesion and to localize it.

The location of the lesion will then determine which approach is best for the patient. Of course, it is ideal if the aneurysm can be clipped intracranially, but some are too close to the base of the

Dr. Abbott is the newly chosen president-elect of the Iowa State Medical Society.

skull and carotid siphon for safe intracranial intervention, and when no signs of hemiplegia are manifest after several days of testing by gradual compression of the carotid artery, an incision is made over the internal carotid artery in the neck, and a clamp is applied and is tightened gradually for a period of two or three days before the artery is ligated completely.

VASCULAR MALFORMATIONS

Vascular malformations may not manifest themselves until spontaneous subarachnoid hemorrhage becomes the outstanding feature, with or without localizing signs. When vascular malformation is found, bilateral carotid arteriography is advisable as a means of eliminating multiple malformations of an extent that would preclude surgery.

Intracerebral hemorrhage is another entity that follows a so-called stroke, usually without the presence of blood in the spinal fluid. When there are localizing signs, such as perhaps aphasia, right hemiplegia or others, arteriography has been found to be of value to the extent that a displacement of vessels has occurred. Then a perforator opening may be placed over the area that the arteriograms have indicated, and subcortical evacuation of 10 to 30 cc. of blood will be followed by marked improvement. At times, an osteoplastic flap must be turned to evacuate the hematoma.

Hemangioepithelioma is a rare condition that can be detected by angiography. In my experience, radiation therapy has been superior to any surgical attempt, except possibly ligation of the internal carotid artery, as a means of eliminating the distressing bruit which sometimes occurs in the skull in this condition.

ARTERIAL THROMBOSES

In thrombosis of the common carotid artery, there may be a chain of events resembling that of a stroke, except that a history of apoplexy is lacking from the onset. The thrombosis may occur over a period of a few days, or more frequently it comes on during sleep. On the following morning, the patient does not awaken or is extremely drowsy, and there is usually a hemiplegia. The spinal fluid is clear, but there is often an elevation of cell count to possibly 30 or 40 lymphocytes per cubic centimeter of spinal fluid, and appropriate angiography may reveal a spasm or a complete obstruction of the common or internal carotid artery. In some instances, it is felt that a series of cervical sympathetic procaine infiltrations of the affected side may be of benefit in relieving the spasms of the collateral vessels, and sometimes a remarkable improvement of symptoms ensues.

In thrombosis of the posterior inferior cerebellar artery, the clinical picture is so clear-cut as to established the diagnosis without vertebral arteriography. However, the arteriography can and has been done.

In thrombosis of the basilar artery, vertebral arteriography shows a very clear-cut clinical picture of phenomena such as the beaded appearance of a vessel.

NEOPLASMS

Various types of neoplasm have somewhat characteristic patterns.

The astrocytoma group has a distinct cirsoid pattern which sometimes outlines the tumor.

The meningioma has a more filiary pattern, and the tumor usually can be outlined.

Angioma has the appearance of earthworms and sometimes has rather extensive enlargement with hemorrhage into the tumor itself. This is often demonstrable by the vascular pattern on the arteriogram and also a shifting indicative of an intracerebral hematoma.

Oligodendroglioma has a tumor pattern that usually is rather avascular at the center.

Brain abscess is seldom seen today because of the extensive use of antibiotics. Sometimes, however, when in addition to clinical signs pneumoencephalography or ventriculography is incapable of localizing the space-taking lesion, angiography is beneficial.

It also aids the neurosurgeon in planning his approach to the operative area, and with strict attention to the typical vascular pattern, he can use it in formulating a pretty clear preoperative diagnosis.

CONTRAST MEDIA

Thorotrast was the original contrast medium, but now, because of its potential radioactivity, it is less widely used than it once was. Some authors do feel that for people in whom sensitivity has been established, Thorotrast may be the drug of choice, but I ceased using it seven years ago.

Diodrast was the most satisfactory medium until recently, but it has been discovered that there is no safe way of testing a patient's sensitivity to it. Previously, I had been testing patients for sensitivity by placing a drop of Diodrast in the eye, and I found no evidence of irritation. But much to my amazement, I have learned that in several centers sudden and severe inflammation has resulted in a patient's losing an eye as a result of that test. As yet, no alternative test has been proved safe, but efforts are being made to convince the manufacturers that one must be found.

Neo Iopaque is a medium that I used on a few occasions, until again I heard that some severe reactions and side effects had been noted by other physicians. I then quit using it.

Hypaque, recently, has seemed to be the drug of choice, and I feel that there are fewer side effects and better capillary visualization from it than from the products I used previously. There are other products, but I have had no experience with them.

TECHNIC

Open visualization and mobilization was the original technic for the performance of angiography. For many years I used that method, and still do if the artery is not entered readily by the percutaneous method. I feel that the routine used in the open exposure of the carotid artery is usually quicker, but it is disadvantageous in that one may have to handle a brittle artery, and there may be a resultant scar. Brittle arteries are very frequent in the aged, but since the incision in only about one inch long, the scar in the neck can be minimal. There is the further objection that if repeated angiograms are indicated within a short time after a surgical procedure, the method is somewhat impractical.

The percutaneous method is most commonly used, and in a high percentage of cases it is most practical. However, it is my opinion that if the artery is not entered within 15 or 20 minutes, the procedure should be discontinued and performed at a later date, or open exposure of the vessels should be carried out instead.

I am definitely of the opinion that repeated irritation can cause a spasm or even a thrombosis of the carotid circulation. Some authors have advocated the use of a preoperative cervical sympathetic procaine infiltration, and I used that procedure for several years. But I have discontinued it, for I do not feel that we have sufficient evidence that it prevents spasm, enlarges vessels to any degree or produces superior angiograms.

FOLLOW-UP VISUALIZATION

It is quite satisfactory at times to repeat the angiograms, particularly in surgery of aneurysms and vascular malformations. Also, some authors have injected opaque media so that they might evaluate the cavities such as a residual of an intracranial hematoma or brain abscess. I have not used this technic routinely, for I have not felt that it was indicated, and I am opposed to the instillation of any unnatural medium into the body unless it is absolutely necessary. Particularly with the intracerebral hematomas and the subdural hematomas, it has been found that additional radiologic help such as pneumoencephalography and ventriculography is useful.

SUMMARY

Various contrast-study technics have been presented, and their use in the diagnosis of different types of lesions has been discussed. It is felt that further benefits will follow a more aggressive approach to these lesions, and that in properly controlled procedures, very few untoward effects will occur.

Accidents, of course, will take place from time to time in the best medical centers. The commonest complications are sensitivity to the iodine solutions, thrombosis of the injected vessel and the possibility of rupturing a vessel. Infection seldom occurs, and if it does it can readily be controlled through the use of antibiotics. However, the availability of antibiotics is no excuse for careless surgical technic.

The type of mechanical apparatus has not been discussed, for it will vary with the set up in which individual radiologists and neurosurgeons are working. Whether they change plates manually or use an automatic machine should be left up to them.

However, I urge that further consideration be given to the adoption of a more aggressive attitude, for I am certain that in the future more lesions can be detected earlier, and that many people, particularly those suffering from early vascular lesions, can be benefited. Improvement can result only from cooperation between radiologists and surgeons, and it is my opinion that none of these diagnostic procedures should be carried out unless there are adequate neurologic facilities to permit the performance of appropriate therapy within a very short time after the tests.

The advantage of angiography is that the operation can be deferred for a day or two after the diagnosis has been made. If the lesion is visualized by pneumography or ventriculography, it is almost imperative that the operation take place on the same day.

In the future, a close working cooperation between radiologist and neurosurgeon should promise a great deal of hope in the detection and appropriate treatment of early surgical lesions.

COMPLETE MATERNITY CARE

A comprehensive review of complete maternity care will be presented by the American Committee on Maternal Welfare at the Seventh American Congress on Maternal Care (formerly known as the American Congress on Obstetrics & Gynecology) to be held at the Palmer House, Chicago, July 8-12, 1957. The program committee consists of representatives from obstetrics-gynecology, general practice, pediatrics, anesthesiology, nurse anesthesia, nursing, nutrition, public health, hospital administration, mental hygiene and social service, and approximately 4,000 people are expected to attend. Further information can be secured from the Committee, 116 South Michigan Avenue, Chicago 3.

Plan to Attend the 1958
ISMS Annual Meeting
Veterans Memorial Auditorium
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State University of Iowa College of Medicine

Clinical Pathologic Conference

November 28, 1956

SUMMARY OF CLINICAL FINDINGS

A 74-YEAR-OLD WHITE WOMAN was first admitted to the University Hospitals because of a small, brown, pruritis "sore" on her left ankle that had been present for 1½ years. Repeated scratchings had often produced bleeding. Within one year, the lesion had increased to the size of a navy bean, and it had then been treated with 5,000 r. through a quarter inch of aluminum. It had then become smaller, but in approximately three months new red areas and nodules had been noted above the original site. The past history and systems were non-contributory.

On admission the patient was cooperative, well developed and well nourished. A slight scoliosis and dorsum rotundum, and an enlargement of the left chest were noted anteriorly. The heart was enlarged to the left of the anterior axillary line. There was a sinus rhythm with a few extra systoles, and a systolic murmur in the apical and aortic areas. The blood pressure was 170/100 mm. Hg. The liver and spleen were not palpable. There was a firm, enlarged left inguinal lymph node. The vaginal examination revealed an irregular cervical polyp. Just above the left external malleolus, there was an ulceration measuring 2.5 x 3.0 cm., with a crusted base, peripheral edema and redness. At the margins of the ulcer, two small raised areas about 2 mm. in diameter were noted.

The x-ray film of the chest revealed a mediastinal shift and a rounded shadow in the anterior mediastinum displacing the lung anteriorly. The routine urinalysis was negative. The hemoglobin was 13 Gm./100 ml., the red blood cell count was 5,400,000 per cu. mm., and the white blood cell count was 5,800 per cu. mm. The serologic tests for syphilis were negative. A test for melanin in the urine revealed 10.5 mg./100 ml. The I^{131} uptake was 17 per cent in four hours, and 26 per cent in 48 hours. An electrocardiogram was normal. The lesion was biopsied. At this point, the patient signed her release.

One and a half years later, the patient's left leg was amputated below the knee, and she was fitted with a prosthesis that enabled her to do her own housework and gardening.

Two and a half years later, she returned for the second and final time, complaining of shortness of breath and a yellow discoloration of the skin that had been present for about four weeks. She had vomited on several occasions, but had had no bloody stools or hematemesis. Ten days before admission, she had received six pints of blood.

The physical examinations at the time of this second admission revealed a blood pressure of 120/60 mm. Hg., and a pulse rate of 90 beats per minute. Early bilateral lenticular opacities were seen. There was left cardiac enlargement, and a loud, Grade II, blowing crescendo systolic murmur in the mitral and aortic areas. A2 was louder than P2. The liver border seemed nodular and was 2 cm. below the costal margin.

In the midline of the abdomen, there was a non-movable mass 3 cm. in diameter attached to the posterior abdominal wall. The left leg was absent below the knee, and the stump was not remarkable. The skin did not appear yellow, but the sclerae were mildly icteric. The urinalysis was negative except for a trace of bilirubin. The hemoglobin was 4.6 Gm./100 ml., and the red blood cell count was 1,350,000 per cu. mm. The white blood cell count was 12,100 per cu. mm., with a normal differential. The hematocrit was 12 per cent. The sedimentation rate was 150 mm. per hour, the bleeding time was 10 minutes and the coagulation time was six minutes. The prothrombin time was 17.8 seconds, with a control of 16.8 seconds. Clot retraction was normal. Fragility hemolysis began at 0.48 per cent and was completed at 0.32 per cent. The platelet count was 36,000 per cu. mm. The reticulocytes seemed normal in number. The Meyer's test of the stool was negative. The stomach contained free acid after histamine injection.

A chest x-ray film at this time showed that the left mediastinal shadow which had been noted four years previously had increased somewhat in size.

Serum proteins were 6.1 Gm./100 ml., with albumin 3.7 Gm. and globulin 2.4 Gm. Alkaline phosphatase was 2.0 Bodansky units. The zinc turbidity test showed 2.8 units. The thymol turbidity was 3.0 units. Melanin in the urine measured 14.6 mg. per 24 hours. The cephalin flocculation tested 4+ in 48 hours. The creatinine was 1 mg. per cent, and the blood urea nitrogen was 20 mg. per cent. The carbon dioxide content was 19.4 mEq. A direct Coombs' test was positive. The bone marrow revealed marked myeloid hyperplasia. The one-minute Van den Bergh was 0.2 mg. per cent, and the 30-minute Van den Bergh was 1.3

mg. per cent. Urobilinogen in the stool showed 20 mg./Gm. The bromsulphalein test showed 4 per cent retention in 45 minutes. An electrocardiogram was normal.

On the seventh hospital day, numerous ecchymotic spots were noted on the patient's abdomen, arms and leg. Meticorten, 7½ mg. every six hours, was given, and it was later replaced by corticotrophin. Repeated transfusions caused no significant change in the hemoglobin, and the platelets disappeared from the blood. After three weeks of hospitalization, petechiae were more numerous, and tarry stools appeared. In spite of repeated transfusions, the patient died on her twenty-third hospital day.

CLINICAL DISCUSSION

Dr. Raymond F. Sheets, Internal Medicine: This protocol concerns a 74-year-old white woman who was admitted to the University Hospitals after having had x-ray therapy elsewhere for a lesion on her left ankle. I find I have difficulty in deciding how to discuss this case, but I think it is best for me to talk about the conditions one at a time. Let me start with this lesion on the ankle.

Initially, it was a brown, pruritic sore about the size of a navy bean. After it had been treated by x-ray, new lesions appeared up the leg. They were red and somewhat raised. Later, the lesion was described as an ulcer having two small raised areas about 3 mm. in diameter. From this story, one has to think of a malignant lesion that began on the ankle and spread up the leg. The lesions that one ordinarily would think of in this location are fibrosarcoma, squamous cell carcinoma of the skin, or melanoma.

At this time we should have a report on the x-rays of the chest.

Dr. Carl Gillies, Radiology: The chest films were obtained when the patient came here for the first time—i.e., three years before those taken on her last admission. The lung fields themselves appeared clear, there being no evidence of metastatic lesions. But there was a tumor mass at the left hilum which in the lateral view was located anteriorly, just behind the sternum. Apparently, it was attached to the mediastinum.

The second set of films, those taken during the patient's final hospitalization, showed that this tumor had increased in size. It had the appearance of a primary tumor. It did not infiltrate, it was sharply circumscribed, and it had become larger. We can only speculate as to what this tumor was. It could have been an atypical lymphoma; it could have been a dermoid, although one would not expect such a lesion to increase in size unless it were a teratoma; it could have been a thyoma; and it could possibly have been thyroid, though that possibility is an unlikely one.

Dr. Sheets: I'm afraid we haven't been helped very much. Again, we are confronted with the problem of selecting the most logical approach. In other words, we have a problem of whether an older person may have had one or more than one disease. Was this lesion in the chest another facet of the one that occurred in the ankle? If either of them was a metastasis, it is a more likely assumption that the ankle lesion was primary. Either of them may have been malignant, or perhaps both of them were. Of course it is quite possible that these two were independent neoplasms. That is as uncommon phenomenon, but it does sometimes occur.

There was also a lymph node in the left inguinal region that attracted attention, and a mass about 3 cm. in diameter on the posterior aspect of the abdominal wall, in addition to the lesion in the chest. I think I shall take the approach that the lesion on the ankle was primary, and that it metastasized first to the inguinal region, from there up the lymphatics to the abdominal wall, and from there into the chest. Thus, the lesion in the chest would have been metastatic.

I should like to ask Dr. Seebohm whether the I^{131} uptake of the lesion in the chest was determined. Was it surveyed?

Dr. Paul M. Seebohm, Internal Medicine: The report included the statement that there was no evidence of radioactivity in the mediastinum.

Dr. Sheets: The melanin in the urine was 10.5 mg./100 ml. Can you tell me the volume of urine the patient passed on the day of the test?

Dr. Seebohm: No, I'm sorry I cannot.

Dr. Sheets: I ask because the presence of melanin in the urine is a normal finding, particularly when the usual ferric chloride test is used. The ferric chloride method is non-specific, and without knowing the total urinary output of melanin, I am unable to say whether the results quoted are abnormal. If one assumes that the patient had a 500 ml. output of urine, 50 mg. of melanin would be within the normal range. With a urinary output of 1,000 ml. it would be slightly on the high side, although I'm not sure that it would be particularly significant.

Dr. Seebohm: The chart tells us that on the second examination there was 58 mg. in 24 hours. It doesn't say what the volume of urine was in 24 hours.

Dr. Sheets: I think one would have to call that normal.

At one point, it is stated that the patient signed her release. I should like to comment on this. I think that a patient's signing out of the hospital reflects a failure on the part of her doctor. It indicates that rapport between doctor and patient is absent, and though there are exceptions, the physician should ordinarily take the blame.

Then the leg was amputated, and the patient came back to this hospital 2½ years later with symptoms of anemia. There was mild icterus, there was bilirubin in the urine and there was severe

anemia. The platelet count was low, and the direct Coombs' test was positive.

With this information, one would have to assume that this patient's case was one of hemolytic anemia. One of the most important statements favoring this diagnosis is the one in the protocol that says the patient received numerous transfusions without elevation of the hemoglobin and red cell count, despite there having been bleeding from the bowel.

Because the sedimentation rate of 150 mm. per hour was extremely high, I wonder whether this may have been multiple myeloma. When the sedimentation rate is in this range, it seems necessary that we think of myeloma, although the tests don't substantiate it in this instance. The serum proteins were normal, the globulin was not increased and the bone marrow did not show any evidence of myeloma cells.

I think that this episode was due to a hemolytic anemia, which most likely was a consequence of the secondary neoplasm. The thrombocytopenia probably had the same basis. In addition, I should have expected the bone marrow to show erythmoid as well as myeloid hyperplasia. Myeloid hyperplasia can be, and often is, a part of the severe hemolytic anemia which accompanies a neoplasm, but the results of the Coombs' test do not support this idea, and it is not a part of the picture that one finds in a hemolytic anemia due to a neoplasm. This would suggest that there was isosensitization, with the production of an abnormal globulin which attached itself to the red cells of the patient. But with the information we have here, I don't see how we can possibly go any further. The Coombs' test results may have been caused by isosensitization from one of the transfusions which the patient had had somewhere along the way.

Another aspect of this case is the heart lesion. Although I don't think it had anything to do with the patient's primary disease, we should talk about it. Her heart was enlarged to the left, and there was a systolic murmur at the apex as well as in the aortic area. The x-ray of the chest did not show the prominence of the left ventricle that is ordinarily associated with aortic stenosis. There is the possibility, though, that this was a mild aortic stenosis without the tremendous hypertrophy that often occurs. Another possibility is that sclerotic roughening of the aorta produced the systolic murmur, but I think that the possibility of aortic stenosis is quite real and should be noted under these circumstances.

Did this lady have any fever on her second admission, Dr. Seebohm?

Dr. Seebohm: The temperature sheet for the last admission seems to be missing, Dr. Sheets, so I can't tell you whether she had fever at that time or not.

Dr. Sheets: The reason for my asking is that I should expect her to have. Fever can be caused by neoplasm, but there is a possibility that she may have had septicemia or subacute bacterial endocarditis in addition to a neoplasm. It is well known that patients with neoplasm may have contracted either of those other ailments because their natural resistance has been lowered. Also, there are more portals for the bacteria to enter the blood stream when a neoplasm is present.

In summary, then, I think that this lady had had a primary neoplasm in the ankle, and that it metastasized to various points. I see no way now to decide whether it was a squamous cell carcinoma, a fibroscarcoma or an amelanotic melanoma. In addition, she had hemolytic anemia caused in part by a neoplasm, but she may also have had isosensitization. Besides, she had incidental aortic stenosis.

Dr. John R. Carter, Pathology: I should like to ask whether at any time the patient had a leukopenia.

Dr. Seebohm: The last white count on the chart is 15,000. She died several days later.

Dr. Frederick W. Stamler, Pathology: In the report of the bone marrow examination, was there any statement regarding erythmoid?

Dr. Seebohm: In the summary of the bone marrow report that was included in the protocol, there was mention of "marked myeloid hyperplasia."

Dr. James A. Clifton, Internal Medicine: There is the statement that repeated transfusions did not essentially change the hemoglobin. Were the transfusions given before or after she bled?

Dr. Seebohm: The transfusions were given both before and after. That is, the patient had a low hemoglobin, was given transfusions, and after the transfusions she bled, again leaving her hemoglobin very low.

Dr. Clifton: Are you sure she wasn't bleeding then?

Dr. Seebohm: Terminally, I think that she was bleeding. There is a note about the tarry stools in the last day or two. Prior to the first transfusion, there was no evidence that she had bled.

Student: What was the total duration of this illness?

Dr. Seebohm: Approximately 3½ years from the date of the first ulcer.

Dr. Henry E. Hamilton, Internal Medicine: Dr. Clifton seems to be bothered about bilirubin as regards evidence of hemolysis. With a normal bilirubin value, one can have a hemolytic rate of say four or five times normal. This simply means that bilirubin is taken out of the circulation as fast as the cells are destroyed. Thus, we don't believe the bilirubin level in necessarily a very reliable index of hemolysis, and one should use several other tests to exclude the possibility of a hemolytic process.

Dr. Elmer L. DeGowin, Internal Medicine: I'd like to ask Dr. Gillies whether in his interpretation of the last x-ray film of the chest he considered the possibility that the heart shadow was enlarged as

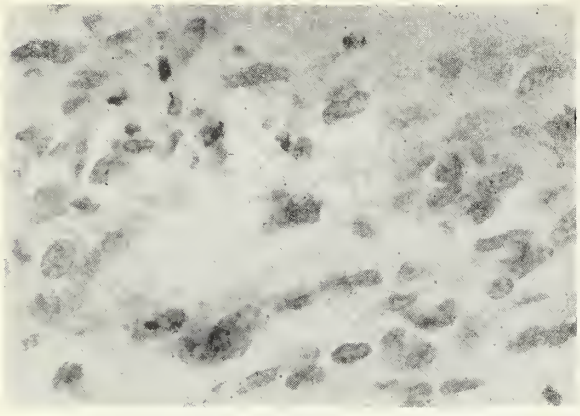


Figure 1. Anaplastic malignant neoplasm, probably malignant melanoma.

a result of myocardial fluid, possibly from invasion of that neoplasm.

Dr. Gillies: Rather than pericardial effusion, I believe a tumor involving the mediastinum was suggested by the contours.

Student: At any time during the illness, was the lesion on the ankle biopsied?

Dr. Seebohm: Yes, that's stated in the third paragraph of the protocol. The lesion was biopsied, and the patient then signed her release from the hospital.

Dr. Stamler: I wonder if Dr. Sheets would comment on the hemolytic anemia in the presence of the tumor.

Dr. Sheets: In 1905, Richard Weil first demonstrated that tumor tissue has a higher than normal concentration of material that will hemolyze red cells. His observation was confirmed about 1945 when Gross again noted it. Carcinoma of the stomach and carcinoma of the breast were the ones Gross particularly studied, and he found that they hemolyze red cells when they are incubated with them. Normal tissue will behave similarly, but the concentration of hemolytic substance in tumor is much higher. We have repeated this work and have found the same thing. We ran across one tumor tissue which had a tremendously high concentration of hemolytic material. In addition, Dr. Hamilton, Dr. DeGowin and I found in our studies of red cell survival that patients with neoplasms destroy normal transfused erythrocytes at an abnormal rate. The anemia of patients with neoplasm (it's very common and is one of the cardinal symptoms of neoplasm) can be explained on the basis of hemolysis. They may have blood loss in addition, but over and above that, the anemia is due to destruction of the red cells. I've not completely answered your question, but I've given you as specific an answer as is possible at the present time. The next step, of course, is to find out what this hemolytic material is, and no one has yet done that.

Dr. Raymond Vickers, Internal Medicine: Does the severity of the hemolysis provide a clue to the identity of the tumor? In other words, does the severity have any diagnostic significance?

Dr. Sheets: There is a marked difference between individual tumors, but there is not so much difference between types of them. That is to say, certain tumors of any one type can be extremely hemolytic, and others of the same type may not be. Of the ones we are talking about, the melanomas are most apt to be hemolytic. On the other hand, some patients with carcinoma of the bronchus have very severe hemolytic anemia, and of course hypernephromas are known to produce it. We see strong hemolytic mechanisms in patients with carcinoma of the pancreas and occasionally of the stomach. Thus, I don't think that these observations on the anemia alone would permit a very good guess as to the type of neoplasm.

Dr. Stamler: The first of the slides that I shall show you (Figure 1) is a photomicrograph of the biopsied tumor which was diagnosed as an anaplastic malignancy compatible with, but not diagnostic of, malignant melanoma. In this section there are two areas which show small amounts of a granular, yellowish-brown pigment, and there are also a few very fine granules elsewhere. This pigment has an appearance compatible with melanin. Since it does not take the iron stain, we assume that it is not hemosiderin, and that is important in this case because this patient did have rather extensive hemosiderin deposits elsewhere. The histology of the tumor is rather nondescript. It is a rather anaplastic type of tumor, with very large, irregular hyperchromatic nuclei which show no particular pattern. The elongated or spindle-like shape of the cells is not particularly diagnostic of melanoma, but it does not rule against the diagnosis.

At autopsy, this patient displayed very widely distributed hemorrhagic manifestations. There were ecchymoses and petechiae in the skin; there was a small subdural hematoma, with subarachnoid

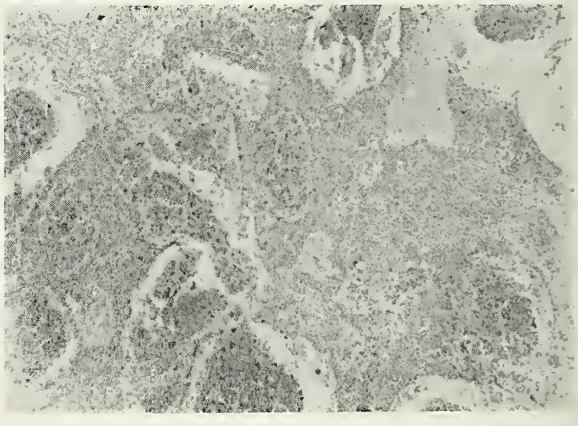


Figure 2. Mediastinal tumor. Blood-filled spaces simulate pattern of cavernous hemangioma.

hemorrhage and small, intracerebral foci of hemorrhage; and there also was massive pulmonary hemorrhage. The entire gastrointestinal tract from stomach to rectum was filled with tarry, old blood, although there was no point of massive bleeding. Apparently there had been generalized oozing from the mucosa of the gut. There were visceral and serosal hemorrhages of all of the organs. On the basis of what blood studies were done, I should assume that bleeding had probably been due to severe thrombocytopenia, or complete absence of platelets.

The tumor in the mediastinum measured 7 x 8 x 5 cm. It was a rather cystic, hemorrhagic mass, and was diagnosed as a lympho-epithelial primary tumor of the thymus, with rather extensive cystic and hemorrhagic degeneration. It was a benign lesion, and there were metastases neither from it nor from the tumor which the patient had previously had on her ankle.

In regard to the heart, stenosis of the mitral valve is described in the protocol. Since no measurements were taken, and since I don't have any section illustrating it, I have not listed a specific diagnosis of mitral valve disease. The aortic valve was said to be of normal caliber. There was a mild hypertrophy of the left ventricle. Ecchymotic hemorrhages present in the myocardium were comparable to those found in most of the other organs. There was a rather generalized hemosiderosis, with iron deposits in the liver, spleen, lymph nodes, pancreas and kidney tubules compatible with typical transfusional siderosis.

The other significant finding was in the bone marrow. Grossly, the marrow was hyperplastic—i.e., red or pink marrow was present not only in the usual sites, but in the femoral shaft as well. This marrow showed very poor maturation, particularly of the erythroid elements, and I did not find a single megakaryocyte in any of the sections. The myeloid elements were not hyperplastic, but they were much more nearly normal than the erythroid elements, and I wondered whether the report of myeloid hyperplasia might have indicated merely a hyperplasia in contrast with the hypoplasia of erythroid elements.

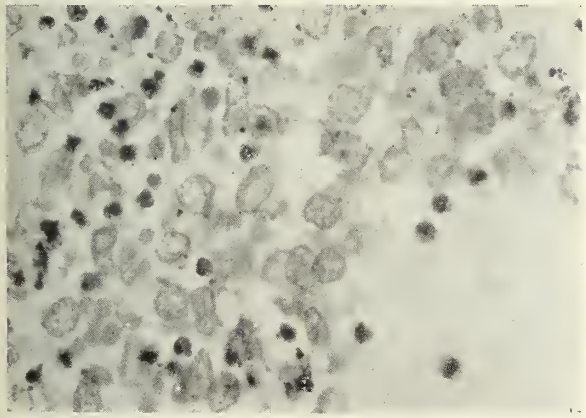


Figure 3. Mediastinal tumor. Cystic space filled with lymph-like fluid, and bordered by large pale epithelial cells.

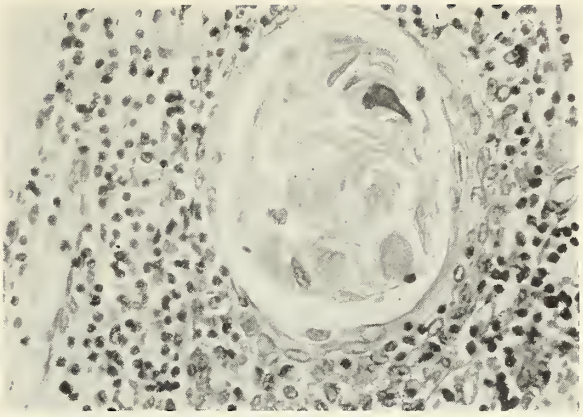


Figure 4. Thymoma of mediastinum, showing Hassall's corpuscle with surrounding epithelia rim and background of lymphocytes.

A low power view of the mediastinal tumor shows many pools of blood (Figure 2). At first glance, this looks like a cavernous hemangioma. There is considerable solid tissue between the blood lakes, and at higher power one can see that this tissue has the rather typical histology of thymoma. These blood-filled areas, I think, were not originally what they now appear to be, but instead were foci of cystic degeneration filled with lymph such as one sees in one instance on this slide in which the lake is not filled with blood. I think that the blood here is merely a part of the generalized hemorrhagic condition which this patient showed at death.

A higher power view of one area of cystic degeneration is not particularly hemorrhagic (Figure 3). These tumors have been classified as lymphoepitheliomas or lymphangioendotheliomas because of a difference of opinion as to whether these spaces represent endothelial-lined lymphatic structures, or are cystic areas which developed in epithelial masses. The border of this cystic area shows that the space here is not lined by endothelium, but merely by the large cells that are probably epithelial. In addition, there are rather well formed thymic corpuscles scattered throughout, ones that are definitely epithelial in nature (Figure 4). These are filled with keratinized epithelial debris in the center, with more of the larger epithelial cells at the periphery, in addition to the diffusely distributed lymphoid elements.

The simultaneous occurrence of a tumor of the thymus and a severe anemia has been previously recognized. We have seen it several times locally, and there are several reports of it in the literature. A recent review listed only nine cases.* All of them showed severe anemia, which in most cases

*Ross, J. F., Finch, S. C., Street, R. B., Jr., and Strieder, J. W.: Simultaneous occurrence of benign thymoma and refractory anemia. Blood, 9:935-952, (Oct.) 1954.

was diagnosed as pure red cell anemia. Several cases were also reported in which there was a pancytopenia or thrombocytopenia. In several of these cases, the anemia was relieved following removal of the thymic tumor, but in others it was not. The authors conclude that there is a definite relationship between some thymic tumors and blood dyscrasias, but a common etiologic factor has not been proved. It is known that certain drugs which affect the function of the hematopoietic system may also affect the thymus. For instance, estrogenic drugs depress hematopoiesis and cause corresponding thymic hyperplasia under certain conditions. Also, some of the benzol drugs such as methylcholanthrene may induce thymic hyperplasia at the same time that they cause erythropoietic hypoplasia.

Dr. Seebohm: Dr. Walz, have you and Dr. Cross had similar experience with this combination of thymoma and hemolytic anemia?

Dr. Donald V. Walz, Veterans Administration Hospital: We had a case that was very similar in many respects to the one just presented. Our patient was admitted to Veterans Hospital in February, 1953. He was a 65-year-old white male who had been previously hospitalized elsewhere with the complaint of weakness, dyspnea and anemia. At that hospital he had had several blood transfusions, and a bone marrow was reported to us as showing extreme myeloid hyperplasia, with a myeloid erythroid ratio of 50 to 1 and extreme hypoplasia of erythroid elements.

On his admission to the VA Hospital, there was a questionably palpable spleen. In roentgenograms of the chest, there was a mass visualized in the anterior mediastinum. The patient had a red blood cell count of 1.4 million, with 4 Gm. of hemoglobin. Other blood studies, including a white blood cell count and a platelet count, were normal. Bleeding and coagulation times were normal. Reticulocyte counts were never over 1.5 per cent. The patient had increased urobilinogen levels in stool and in urine. Red blood cell fragility tests were normal. The patient was thought to have a malignant lymphoma, but lymph node biopsies were negative. About a month after his admission, an exploration of his thorax was done and a thymoma was removed. During his hospitalization, he had received 39 units of blood, 500 cc. each. The anemia was felt to be hemolytic, and after the operation it continued unabated until about September, 1953, or about six months after the removal of the thymoma. Then the anemia seemed to level off, and no more transfusions were given after December, 1953 (nine months after surgery). A bone marrow done before surgery had revealed severe myeloid hyperplasia with almost none of the erythroid element and the myeloid hyperplasia was, in our opinion, so extreme that we were suspicious of impending myeloid leukemia. After blood transfusions were no longer needed, the bone marrow returned to what we interpreted as complete normality. The patient has been seen on several subsequent occasions, and his blood count has been perfectly normal. He has had no complaints, and the only physical finding has been a questionably palpable spleen.

Radioactive red cell survival studies were not done before the removal of the thymoma, but subsequent studies have revealed a markedly decreased survival time, showing that the patient still has a hemolytic factor. Apparently he is able to compensate for the hemolytic process and maintain a normal hemogram.

In a photomicrograph of the bone marrow of this patient, one could see the marked myeloid, but no erythroid element. There was, we felt, a relative increase in the more immature myeloid forms, and yet there was no maturation arrest. The myeloid element was extremely hyperplastic, and the erythroid element almost absent. Our slide was very similar to what Dr. Stamler has described.

The thymoma had a rather characteristic appearance, grossly, with areas of hemorrhage and cyst formation. The solid tissue had the rather homogeneous, white appearance of lymphoid tumors. A low power section of the thymoma showed more of a lymphoblastic-lymphocytic element, and less of the epithelial element than did the case that you have been considering, but a high power section showed a microscopic appearance very similar to that of the case presented this afternoon.

Three years after the removal of a thymoma, our patient is alive and perfectly compensated to a hemolytic anemia, as demonstrated by shortened red blood cell survival studies. He consistently maintains a normal peripheral hemograph.

Dr. Sheets: I missed one thing. Does the bone marrow of your patient show erythroid elements at the present time?

Dr. Walz: Yes, several bone marrows have been done since he recovered from his anemia, and they have been interpreted as perfectly normal.

Dr. DeGowin: I should like to know what happened to the nodular liver that was felt in the University Hospitals patient.

Dr. Stamler: It had completely disappeared by the time of autopsy.

Dr. DeGowin: Well then, we can't say that the patient had a malignant neoplasm. The nodular liver was felt during life, and the pathologist didn't examine it?

Dr. Seebohm: Maybe Dr. Stamler can find a specific statement in the record about that.

Dr. Hamilton: I should like to ask another question concerning the autopsy report. Apparently, from the clinical side, it was thought that this patient had an aortic stenosis. It seemed to me that, in part, the autopsy findings were compatible with an aortic stenosis rather than with a mitral stenosis. It was stated that there was a mitral stenosis and a thickened left ventricular wall. I think one

should expect the wall of the right ventricle to be the thickened one if this were a mitral stenosis. Perhaps the pathologist got the valves mixed up at autopsy.

Dr. Seebohm: That's rather a long question, but it boils down to this: Dr. Hamilton would like to know whether or not there may have been a mix-up in the description because he would expect the right ventricle to be enlarged if the mitral valve were stenosed, and would expect the aortic valve to be thickened if the left ventricular wall were thickened.

Dr. Stamler: I can comment merely on the information contained in the protocol. I see no reference to the posterior abdominal tumor. The liver is described in considerable detail, and there is the specific statement that there was no evidence of tumor metastasis. The heart weight is given as 370 Gm., which is slightly above normal. Tricuspid, pulmonary and aortic valves are described as normal, and the mitral valve is said to have been stenosed, with thickening of valve leaflets and chordae tendinae. In view of that description, I do not believe that the prosector confused the mitral valve with the aortic valve. The left ventricle is recorded as 16 mm. and the right ventricle as 2 mm. in maximum thickness. The latter measurement is actually less than normal thickness. I won't attempt to explain this.

Dr. Seebohm: I'd like to suggest that incompetence of the mitral valve caused the left ventricular enlargement.

One final note: there's been considerable fumbling with the records here today, and in my own defense I'd just like to point out that these protocols are made up from *your* records.

SUMMARY OF NECROPSY FINDINGS

Dr. Stamler: The large tumor of the mediastinum was found to be a benign thymoma of lymphoepithelial type, with cystic degeneration and hemorrhage. The tumor was quite dissimilar histologically from the lesion previously removed from the ankle, and no metastases from the latter neoplasm were identified.

There was widespread evidence of a more severe hemorrhagic diathesis, with petechiae and ecchymoses of skin, subcutaneous, subserous, and submucosal tissues, in addition to pulmonary hemorrhage and very massive gastrointestinal bleeding. Conspicious hemosiderin deposits were present in the liver, pancreas, spleen, lymph nodes and kidneys.

The bone marrow showed an extreme hypoplasia of erythroid tissue and a complete absence of megakaryocytes, with relatively normal leukopoiesis. There was, in addition, focal lymphoid hyperplasia of hematopoietic marrow. The marrow findings were not diagnostic of leukemia, but instead were in accord with those described in the small number of reported cases of thymoma associated clinically with profound refractory anemia. This applied particularly to the erythroid hypoplasia, although thrombocytopenia or pancytopenia with corresponding histologic findings have also been reported in several cases.

Death was due to massive hemorrhage, chiefly gastrointestinal and apparently due to thrombocytopenia.

ANATOMIC DIAGNOSES

1. Thymoma, benign lymphoepithelial type, with cystic degeneration and hemorrhage
2. Erythroid and megakaryocytic hypoplasia, bone marrow, with focal lymphoid hyperplasia
3. Gastrointestinal hemorrhage, massive, from multiple sites
4. Pulmonary hemorrhage, diffuse, left upper lobe
5. Hemorrhage, focal, involving multiple sites in skin, subcutaneous tissue, brain, thoracic and abdominal viscera
6. Hemosiderosis, moderate, generalized
7. Malignant neoplasm, probably malignant melanoma, left ankle, with below-knee amputation; no metastatic neoplasm.

ISMS GOLF TOURNAMENT

At the 1957 ISMS Golf Tournament, held at the Wakonda Club, in Des Moines, on Sunday, April 28, Dr. Norman Johnson, of Clarinda, finished with a gross score of 78 and won the trophy that had been donated last year by the Whylie Optical Company. Dr. R. B. Allender, of Des Moines, had been the winner last year.

Dr. Don Newland, of Des Moines, was second this year, with 79; and Dr. William Catalona, of Muscatine, was third, with 80. Everyone present received a memento of his participation. The weather was perfect, and it was a great day.

The following firms donated prizes this year: A. S. Aloe Co., Ames Company, Benson Optical Co., Central Pharmacal Company, Ciba Pharmaceutical Products Company, Desitin Co., Foot-so-Port Shoe Company, Ford-Hopkins Drug Co., Des Moines, Frankel Clothing Co., Des Moines, Herman Kucharo, Inc., Des Moines, Katz Drug Company, New Gaynor Bagstad Co., Mickelson's Men's Shop, Sioux City, Hoffman-LaRoche, Inc., V. Mueller & Co., Organon, Inc., Parke, Davis & Co., Pet Milk Co., Physicians & Hospitals Supply Co., Professional Management Midwest, Waterloo, J. B. Roerig & Co., Smith, Kline & French Laboratories, E. R. Squibb & Sons, Div. Olin Mathieson Chemical Co., Walgreen Drug Co., and Winthrop Laboratories Div., Sterling Drug Co.

It is urged that each recipient of a prize send a note of thanks to the donor.

Coming Meetings

Out of State

June 1 — **Fifth Annual National Medical Civil Defense Conference.** Waldorf Astoria Hotel, NYC.

June 1 — **Colorado Medical Alumni Clinics.** Univ. of Colorado Med. Center, Denver.

June 1-2 — **American Diabetes Association.** Commodore Hotel, NYC

June 3-4 — **Carbohydrate and Fat Metabolism, and Its Clinical Applications.** University of Pennsylvania, Philadelphia.

June 3-5 — **Pediatric Hematology.** Children's Hospital, Philadelphia.

June 3-7 — **Management of Mass Casualties.** Brooke Army Medical Center, San Antonio.

June 3-7 — **Harvey Tercentenary Congress (on Circulation of the Blood).** Royal College of Surgeons, London.

June 3-7 — **Annual Meeting, American Medical Association,** Coliseum, N.Y.C.

June 3-14 — **Cystoscopy.** Cook County Graduate School of Medicine, Chicago.

June 3-14 — **Surgical Technic I.** Cook County Grad. School of Med., Chicago.

June 3-28 — **Clinical Use of Radioisotopes.** Mt. Sinai Hospital, N.Y.C.

June 6-7 — **Blood Group Incompatabilities and Erythroblastosis Fetalis.** Children's Hospital, Philadelphia.

June 6-17 — **Bronchology, Esophagology and Laryngeal Surgery.** University of Pennsylvania, Philadelphia.

June 7-8 — **Pediatrics Seminar.** Children's Hospital, Oakland.

June 7-8 — **University of Michigan Conference on Hypertension.** Ann Arbor

June 10-11 — **Treatment of Varicose Veins.** Cook County Grad. School of Med., Chicago.

June 10-12 — **Ballistocardiography (Am. Coll. of Physicians).** Univ. of Pennsylvania, Philadelphia.

June 10-12 — **Orthopedics in General Practice.** New York University, N.Y.C.

June 10-14 — **Surgery of Colon and Rectum.** Cook County Grad. School of Med., Chicago.

June 10-14 — **Postgraduate Symposium on Basic Sciences Related to Anesthesia.** University of Pittsburgh.

June 10-14 — **Thoracic Surgery.** Cook County Graduate School of Medicine, Chicago.

June 10-21 — **Modern Therapeutics in Internal Medicine.** New York University, N.Y.C.

June 11-14 — **Pediatrics.** University of California, San Francisco.

June 13-15 — **Hospital Administration.** Univ. of Nebraska, Omaha.

June 15-29 — **Surgical Technic.** Cook County Graduate School of Medicine, Chicago.

June 16-19 — **Wyoming State Med. Soc. & Rocky Mt. Med. Conf.,** Jackson Lake Lodge, Wyo.

June 16-19 — **Idaho State Med. Association,** Sun Valley.

June 17-19 — **Ophthalmology.** University of Minnesota Center for Continuation Study, Minneapolis.

June 17-20 — **Postgraduate Course for GP's.** Duke University, Durham, North Carolina.

June 17-21 — **Esophageal Surgery.** Cook County Graduate School of Medicine, Chicago.

June 17-21 — **Clinical Bronchoscopy.** Cook County Graduate School of Medicine, Chicago.

June 17-21 — **Hematology.** Cook County Graduate School of Medicine, Chicago.

June 17-21 — **Breast & Thyroid Surgery.** Cook County Graduate School of Medicine, Chicago.

June 17-21 — **Annual Meeting, Canadian Medical Association.** Edmonton, Alberta.

June 17-22 — **Clinical Hematology.** University of Colorado Med. Center, Denver.

June 17-22 — **Fractures & Traumatic Surgery II.** Cook County Graduate School of Medicine, Chicago.

June 17-28 — **Cystoscopy.** Cook County Graduate School of Medicine, Chicago.

June 17-29 — **Neuromuscular Diseases of Children, Especially Cerebral Palsy.** Cook County Graduate School of Medicine, Chicago.

June 17-28 — **Office & Operative Gynecology.** Cook County Graduate School of Medicine, Chicago.

June 17-28 — **Surgical Anatomy & Clinical Surgery.** Cook County Graduate School of Medicine, Chicago.

June 19-21 — **Summer Clinics.** Children's Hospital, Denver.

June 20 — **Joint Meeting, Iowa and Nebraska Academies of General Practice.** Hotel Fontanelle, Omaha.

June 20-22 — **Otolaryngology for Specialists.** University of Minnesota Center for Continuation Study, Minneapolis.

June 22-23 — **Sixth Annual Symposium on Clinical and Laboratory Technology.** U.C.L.A.

June 24-25 — **Chronic Kidney Diseases.** New York University, N.Y.C.

June 24-26 — **Gallbladder Surgery.** Cook County Graduate School of Medicine, Chicago.

June 24-28 — **Technics of Hypnosis.** U.C.L.A.

June 24-28 — **Twenty-fifth Annual Graduate Short Course.** University of Florida, Gainesville.

June 24-28 — **Radium Therapy.** Cook County Graduate School of Medicine, Chicago.

June 24-29 — **Liver & Biliary Tract Disease.** Cook County Graduate School of Medicine, Chicago.

June 26-27 — **Management of Hypertension.** New York University, N.Y.C.

June 27-29 — **Surgery of Hernia.** Cook County Graduate School of Medicine, Chicago.

July 1-3 — **Diabetes & Endocrinology in Relation to General Medicine (Harvard University).** New England Deaconess Hospital, Boston

July 1-6 — **International Congress of Occupational Health.** Helsinki, Finland

July 1-26 — **Thyroid Disease and the Use of Radioactive Iodine (Harvard University).** Massachusetts General & Beth Israel Hospitals, Boston

July 1-26 — **Diseases & Injuries of Bones and Joints.** College of Medical Evangelists, Los Angeles

July 1-31 — **Clinical Heart Disease (Harvard University).** Peter Bent Brigham Hospital, Boston

July 6-12 — **Seventh International Cancer Congress.** Royal Festival Hall, London

July 7-12 — **Joint Meeting of Am. Assn. of Rehabilitation Therapists, Assn. for Physical & Mental Rehabilitation, and Assn. of Medical Directors & Coordinators,** Conrad Hilton Hotel, Chicago

July 8 — **Neuromuscular Diseases: Cerebral Palsy.** Cook County Graduate School of Medicine, Chicago

July 8-10 — **Obstetrics & Gynecology Seminar.** University of Colorado Medical Center, Denver

July 8-12 — **Electrocardiography.** U.C.L.A., Los Angeles

July 8-12 — **Fourth International Conference on Poliomyelitis.** Geneva, Switzerland

July 8-12 — **Sixth Annual Symposium for GP's on TB and Other Chronic Pulmonary Diseases.** Sananac Lake, New York

July 8-12 — **Complete Maternity Care (formerly American Congress on Obstetrics & Gynecology).** Palmer House, Chicago

July 8-13 — **First American Congress of Legal Medicine & Law-Science Problems.** Morrison Hotel, Chicago

July 8-19 — **Cystoscopy.** Cook County Graduate School of Medicine, Chicago

July 8-19 — **Neuromuscular Diseases.** Cook County Graduate School of Medicine, Chicago

July 8-19 — **Basic Principles in General Surgery.** Cook County Graduate School of Medicine, Chicago

July 8-19 — **Electrocardiography & Heart Disease.** Cook County Graduate School of Medicine, Chicago

July 8-20 — **Southern Pediatric Seminar.** Saluda, North Carolina

July 10-11 — **Rocky Mountain Cancer Conference.** Shirley-Savoy Hotel, Denver

(Continued on page xxx)

Editorials

THE 1957 ANNUAL MEETING

The 1957 Annual Meeting of the Iowa State Medical Society was a very fine one though, as the following statistics make clear, it was not appreciably larger than its predecessors as regards attendance.

	1955	1956	1957
Members	906	975	954
Guests	545*	478**	488†
Woman's Auxiliary	250	221	250
Technical Exhibitors	185	225	233
Total	1,886	1,899	1,925

* Including 82 physicians.
** Including 97 physicians.
† Including 111 physicians.

The technical exhibits—and we never cease reminding doctors that it is the technical exhibits that pay the bill for our annual meetings—were too generally neglected. At the booth of one of the leading pharmaceutical manufacturers, only 39 doctors signed the guest register. In order to assure ourselves a continuation of sponsorship from those companies, all of us are going to have to remind ourselves that it is by visiting the exhibitors' booths that we pay the price of admission. The alternative is the charging of a stiff registration fee. Let's remember that rent on the Des Moines Veterans Auditorium is $500 per day, and that rent is by no means the only item of expense.

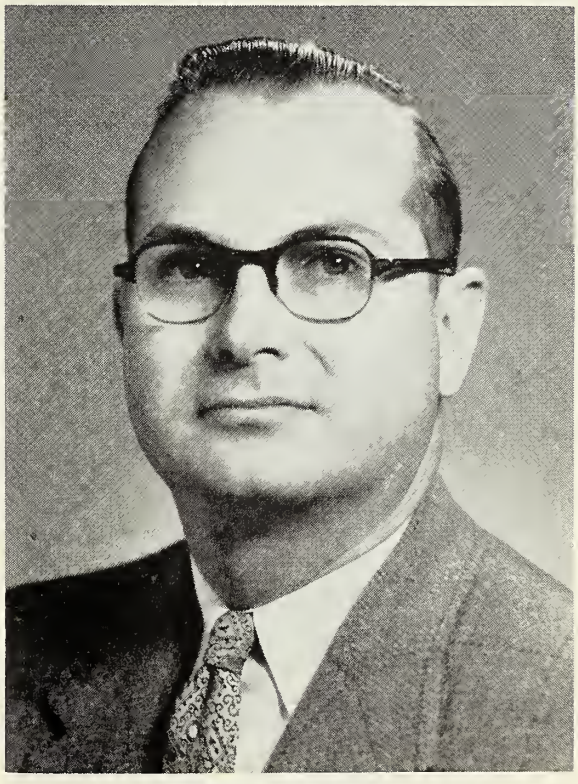
The scientific sessions seemed rather better attended than formerly, both the general (morning) meetings and the sectional ones. And all of the speakers, without exception, lived up to their hearers' expectations. The men who dealt with topics in the field of medical economics—an innovation this year—attracted large audiences, and it seems certain that the business side of medicine will continue to receive special attention at future annual meetings.

At the Annual Banquet, an Award of Merit—the only one this year—was presented by the Board of Trustees to Dr. Francis C. Coleman, of Des Moines, for his work with the Committee on Legislation of the State Society, for his diligence in representing Iowa doctors as one of their delegates to the AMA, and for his highly valuable service in other activities of organized medicine.

The meetings of the House of Delegates and the Blue Shield Participating Physicians' meeting were especially well attended, and there was sufficient difference of opinion to sustain everyone's interest in the proceedings. As regards the most controversial matter, the future of Blue Shield, the House adopted the following recommendation of its Reference Committee on Insurance and Medical Service:

"1. That the Blue Shield Board offer the proposed full service contract at the $3,600 income level, including the revised benefits involving intensive care to patients in critical condition; unusual care over and above in-hospital benefits; consultation; surgical services including surgical assistants, pre-operative and post-operative care in the hospital; concurrent services by two or more doctors by reason of necessity of supplemental skills; obstetrical services on family contract only; anesthesia services; radiation therapy; emergency first aid of accidental injury within 24 hours of accident; diagnostic x-ray and pathological examinations in connection with accidents up to $50 per accident; and to provide supplemental contracts for radiology and pathology services as diagnostic out-patient services to be written as available diagnostic riders on this and the following policies.

"2. That the Blue Shield Board provide a policy paying the physicians' usual equitable fee (and with a reasonable maximum benefit), and including the above revised benefits.



Francis C. Coleman, M.D.

"3. That the Blue Shield Board provide a policy like the last preceding one, but with a deductible clause."

Dr. Herman J. Smith, the speaker of the House of Delegates, is to be commended for the expeditious but nonetheless altogether fair way in which he kept his meetings moving along, and for his proficiency in parliamentary law.

The officers of the Society who were elected (as distinguished from reelected) are: Dr. Walter D. Abbott, Des Moines, president-elect; Dr. Rubin Flocks, Iowa City, vice-president; Dr. A. F. Fritchen, trustee (one year); Dr. S. P. Leinbach, trustee (three years); Dr. C. V. Edwards, speaker of the House; Dr. Harold Morgan, Mason City, vice-speaker; and Dr. R. H. Dahlquist, councilor, first district.

The 1958 Annual Meeting will be held at the Veterans Memorial Auditorium in Des Moines April 20-23.



Dr. Elizabeth Smith Kennedy, 78, of Oelwein, who had just been named General Practitioner of the Year by the ISMS House of Delegates, received congratulations from Dr. Fred Sternagel, of West Des Moines, who was about to be installed as president of the Society. Dr. Kennedy ("Aunt Doc" to her friends) graduated from the school of medicine at SUI in 1901, and is the first woman to receive the GP of the Year award. Her two daughters are also physicians, one in New York, and the other in Florida.

CONSTRUCTIVE CRITICISM, EXCLUSIVELY

A few weeks ago the nationally syndicated newspaper columnist Mr. Sidney J. Harris declared that he couldn't understand why doctors refrain from criticizing one another, and he actually said that he thought something might be gained if physicians were to tell their patients—as tradesmen sometimes tell their customers and as the practitioners of some of the other professions sometimes tell their patients or clients—that whoever last served them made some unforgivable mistakes.

Mr. Harris's suggestions were by no means original. All of us have heard or read them time and time again. But they are none the less completely wrong.

Would it serve any really useful purpose for a citizen who knows—and indeed aspires to know—little more about plumbing than that water usually runs downhill to hear one plumber find fault with the job that another plumber has done? And would it be helpful for a patient to hear from a dentist that his bridge was poorly designed or that the wrong material was used for his fillings? Since in each instance there would be no question of the excellence of the predecessor's intentions, would it not be better for plumber to talk to plumber and dentist to dentist, just as doctors talk only to doctors, about the ways by which they may be able to improve their work?

Physicians do an absolute minimum of backbiting, but they certainly do engage in constant, constructive criticism of themselves. In most hospitals there are tissue committees that watch for surgeons' mistakes. Most state medical societies and virtually all specialty groups publish journals in which they print clinical reports that serve to disseminate knowledge of new technics, evaluate both old and recently introduced medications, and keep track of the progress—or lack of it—that is occurring in the treatment of specific diseases.

In this and in other recent issues of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY, the Iowa Maternal Mortality Reviewing Board has summarized, evaluated and commented upon the handling of every woman who died in this state during or immediately after childbirth in the years 1953 and 1954. Also in this magazine, clinical pathologic reports from the S.U.I. College of Medicine appear month after month. In each of these conferences—and there are far more of them in Iowa City and elsewhere in the state than can be reported in the JOURNAL—physicians review the procedures that have failed to keep one of their patients alive, and consider the means by which they and other doctors with similar problems can hope to do better next time.

In Iowa, the State Medical Society conducts 2½ days of scientific meetings for its members each spring, and beginning very shortly, it will conduct regional meetings in various parts of the state in cooperation with the S.U.I. College of Medicine. The Iowa Academy of General Practice maintains a somewhat similar schedule; the S.U.I. College of Medicine holds half a dozen postgraduate short courses for doctors each year; and no fewer than a dozen of the county medical societies, not to mention a far larger number of hospital staffs, hold at least nine scientific meetings each per year.

Tradesmen and the practitioners of other pro-

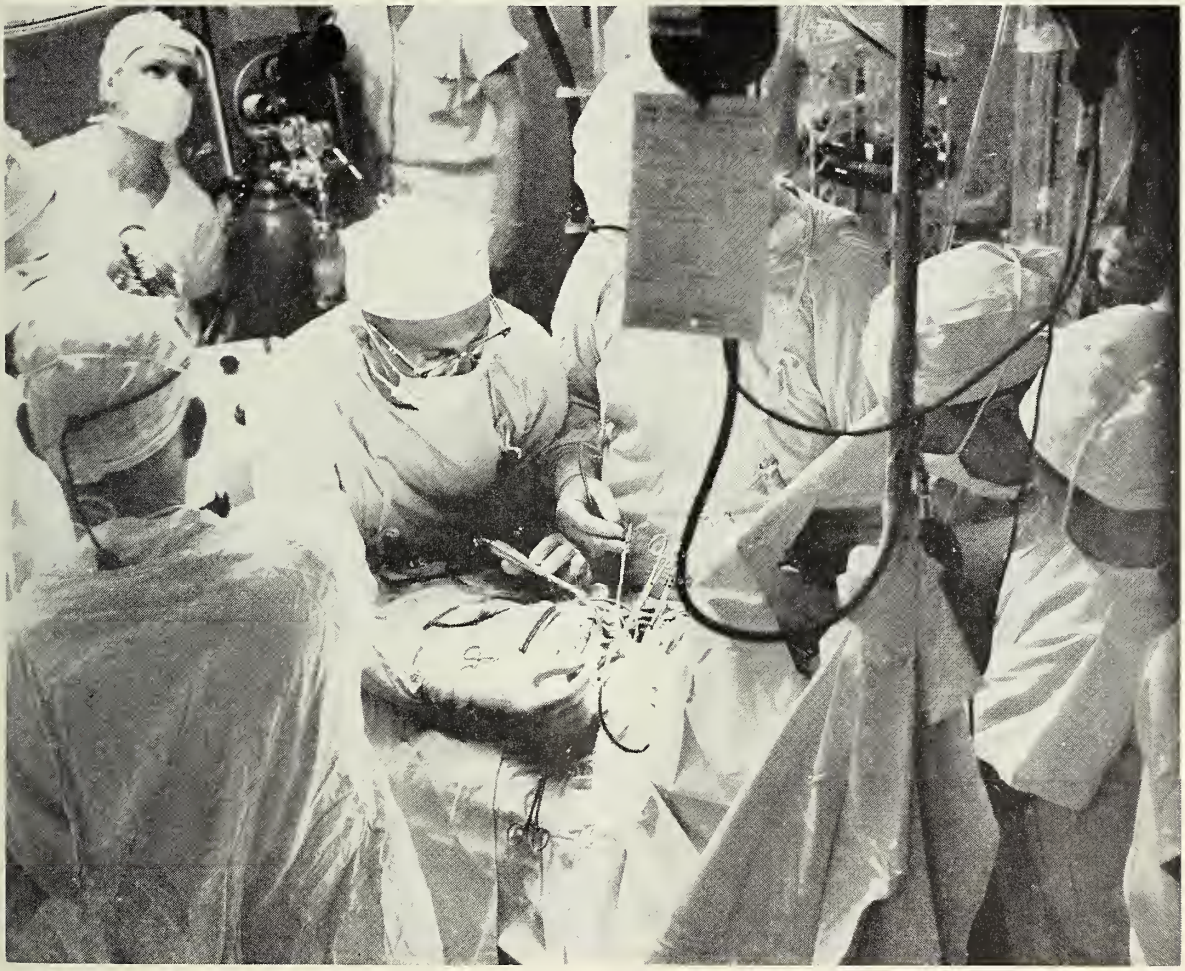
fessions doubtless do what they can to analyze their work and to exchange ideas for improving it. But Medicine unquestionably spends more time—and money—on such activities than does any other group, bar none!

Thus, doctors *do* criticize themselves, and they *do* criticize one another. If Mr. Harris isn't aware of the fact, he merely hasn't taken the trouble to find out.

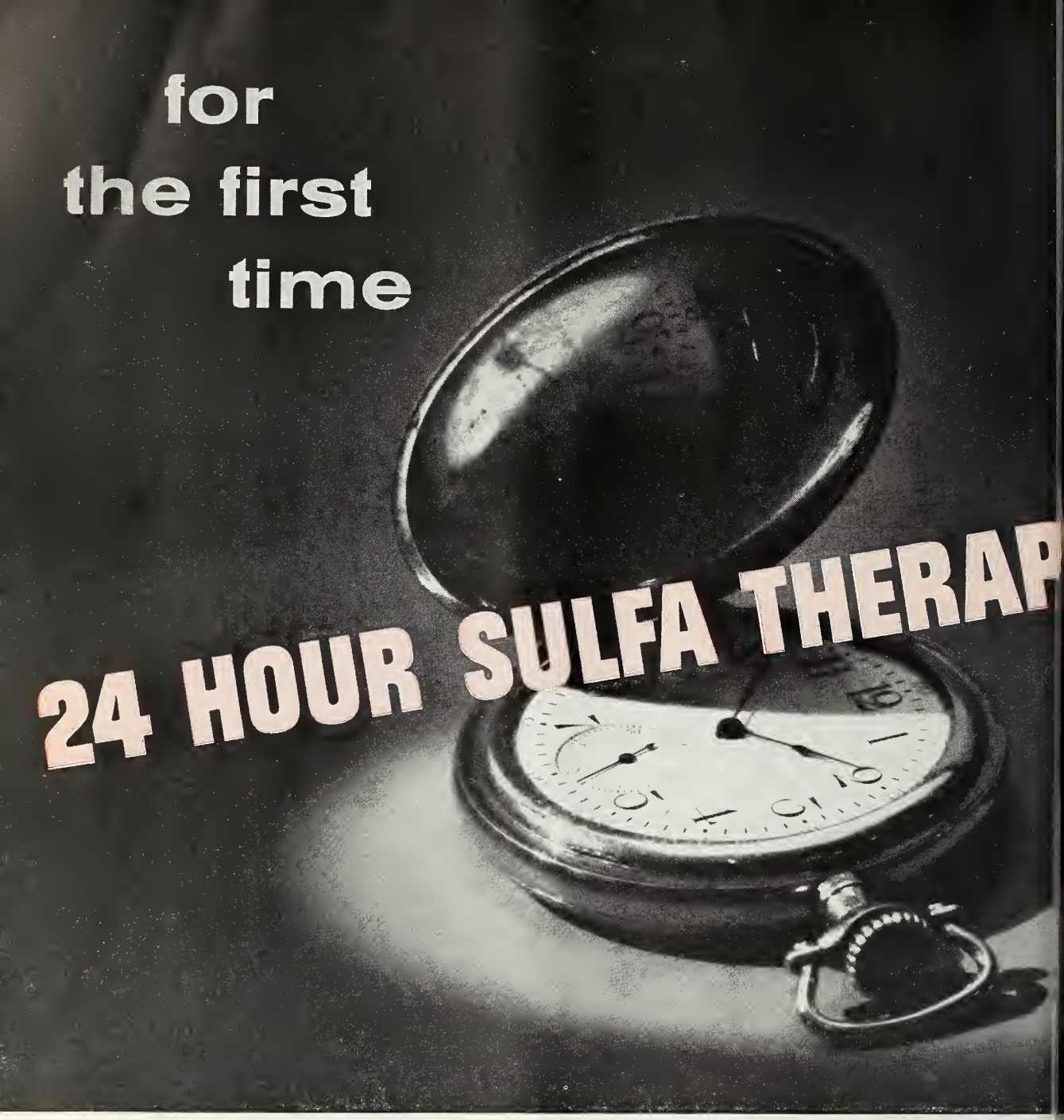
A MILESTONE IN TELEVISION

It is generally agreed that the live television broadcast of heart surgery from Raymond Blank Memorial Hospital on May 1—the first of its kind in the world—constitutes the most productive public relations effort that the Iowa State Medical Society has made. The doctors who saw it were impressed. An internist characterized it as "wonderful," and a pathologist said it had given him one of the few thrills he has received from television. But more importantly in this instance, the public was impressed. From the lay point of view, it was "the talk of the town." Groups in schools, offices and other business places clustered around television sets for the entire period.

Through being reported at length in NEWSWEEK magazine, the program is likely to benefit Medicine nationally. Moreover, that service can redound to the benefit of the ISMS, possibly as further increased recognition of Iowa doctors in the councils of the AMA. It is not too long ago that Iowa's share of the appointive posts in national Medicine consisted of a seat on the AMA House of Delegates' Reference Committee on Credentials, one of the principal duties of which is to make sure that delegates' names have been spelled correctly on the official rolls of the annual convention. In contrast, Iowa is currently represented by Dr. D. C. Conzett on the AMA Committee on Federal Medical Services; by Dr. R. N. Larimer on the AMA House of Delegates' Reference Committee on Reports of Officers; by Dr. Donovan Ward on the AMA House of Delegates' Reference

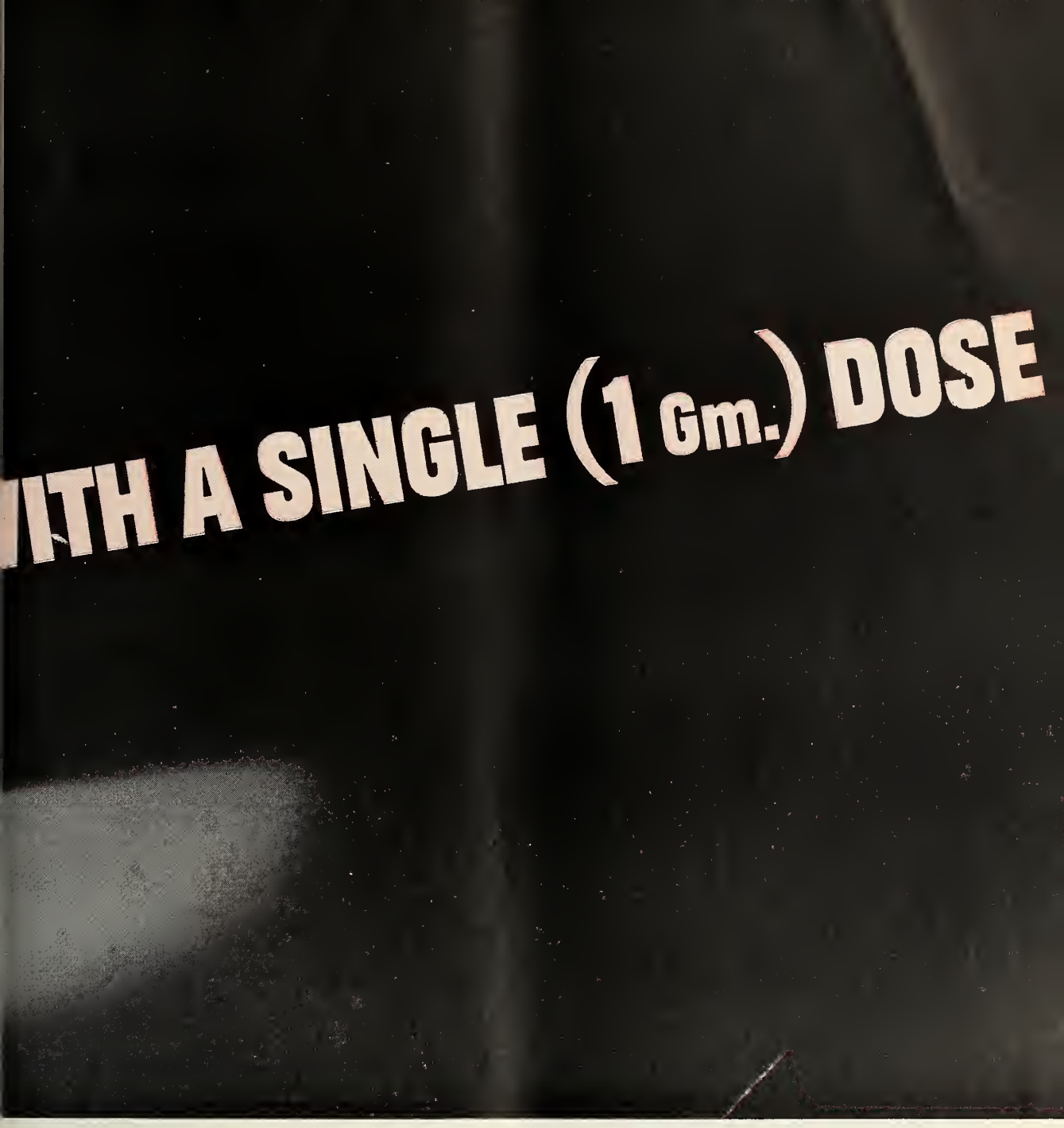


Dry-field intracardiac surgery being televised live from Raymond Blank Memorial Hospital, Des Moines. One of the cameras can be seen above the gas cylinder at the upper left-hand corner of the picture. Dr. W. H. Myerly is standing with his back to the viewer; Dr. Tom. D. Throckmorton's face is obscured by the ticket, and Dr. William Stoll, a resident at the hospital, is leaning over the patient.



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Boger, W. P.; Strickland, C. S.; and Gylfe, J. M.: ibiot. Med. & Clin. Ther. 3:378 (Nov.) 1956.

KYNEX*

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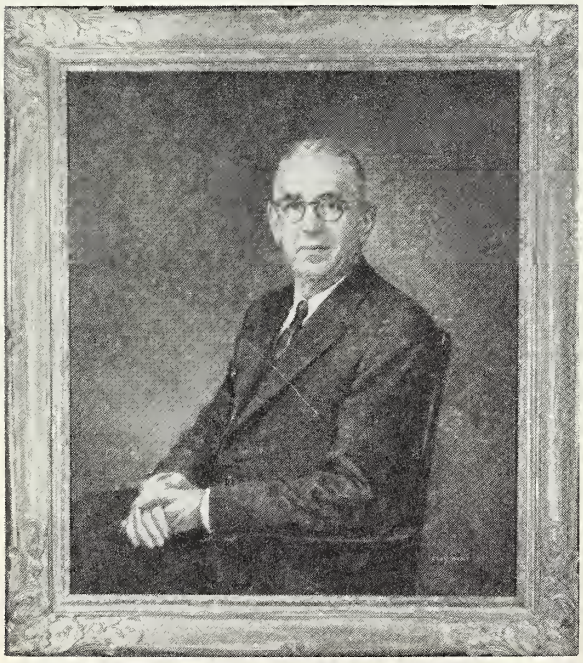
DERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK

Lederle

Committee on Medical Military Affairs; by Dr. F. C. Coleman on the AMA Legislative Committee and on the AMA House of Delegates' Reference Committee on Hygiene, Public Health and Industrial Health; and by Mr. D. L. Taylor on the AMA Public Relations Advisory Committee. Those appointments doubtless are recognitions of the abilities of the men as individuals, but we feel sure that they are also a consequence of the leadership which the ISMS has assumed on several recent occasions.

In arranging for and in presenting this live broadcast of heart surgery, the seven Des Moines physicians who participated either in the operation itself or in the commentary upon it, and the television staff of the State Society are deserving of our thanks. From the surgeons' point of view, some very considerable risks were involved. What if the patient were to die on the table? Could the preoperative diagnosis have been wrong? Would the cameras, the cables, the cameramen and the other supernumeraries crowd the operating room so as to impede the medical personnel and create an additional hazard for the patient? Mr. Ray Stewart and his assistants had considerable jobs to do. In addition to outlining the parts of the operation that were to appear on viewers' screens and the points at which commentaries and interpretations were to be interpolated, they had to plan for emergencies which, fortunately, never arose. In case anything untoward occurred, they were prepared to prevent the viewers from recognizing it. In addition, they arranged for national as well as local press coverage.

Station KRNT-TV deserves our thanks, for it was the station that paid the expenses. Network shows for which the station would have been paid were cancelled, a large crew worked on preparations long in advance of the operation as well as during it, and equipment was tied up longer than is necessary for a run-of-the-mine broadcast. Because the station paid all of those costs, the telecast entailed no out-of-pocket expense for the Society.



The Blank Hospital Association honored Dr. Lee Forrest Hill by commissioning Mrs. Cloy Kent, of Iowa City, to do his portrait and by hanging it on the wall of the hospital lobby. Dr. Hill has practiced pediatrics in Des Moines for 36 years and has been active in its resident training program since its inception 11 years ago. The Association consists of the pediatrics staff of the hospital and the doctors who have served residencies there.

WHAT IS A "NORMAL" DIET?

When you tell a patient to eat a "general well-rounded diet," just what do you mean? He is being bombarded by advertisements urging him to "Drink at least three glasses of milk a day," to "Eat more meat," and to "Start the day with cereal" and telling him that "This bread builds stronger bodies in eight ways." Both you and he realize that though some merit attaches to each of those exhortations, they are motivated primarily by a desire to sell goods. Which of them should he obey?

Research has shown that calcium absorption is better in the presence of protein. But what kind of protein, and how much? It has also been shown that calcium absorption is inhibited and calcium excretion increased in the presence of spinach and/or rhubarb. Do other food substances in our diet act as synergists or inhibitors?

Many deficiency diseases have been described and are now well known. But is it possible that there are others—e.g., arthritis, cancer? Atherosclerosis seems to be nearing a solution, but do synergists and inhibitors play a role in it? Is a dietary imbalance responsible for triggering the onset of diabetes and gout? What is diet's part in instituting allergies? How does diet figure in altering the aging process?

We know much about specific food requirements in quantitative ways, but what of the qualitative ways? Of course little or nothing is actually known about human needs for many minerals and accessory food substances. Do the over-all requirements for different food substances *change* between ages 0 and 100?

When we see the number of tired and sluggish people about us, and when we hear how many boys are turned down for military service because of various types of deficiencies, we are forced to the conclusion that there is something wrong with coffee and rolls for breakfast, to say nothing of the habit of virtually skipping breakfast in anticipation of that great American-made ritual the "coffee break." (But we must sell coffee.)

So you think you know what a good "general well-rounded diet" is. Write your answer in the space left below.

Iowa Health Legislation

The 57th General Assembly considered 1,101 bills. Of these, 149 were followed by the Legislative Committee of the Iowa State Medical Society as being of interest to physicians in Iowa.

Of the 1,101 bills considered, 321 were passed. Of the 149 bills followed by the Society, 36 were enacted. This report will give brief consideration, first, to the more important health legislation enacted by the 57th General Assembly, and second, to the significant legislation which failed of enactment.

I. LEGISLATION WHICH WAS ENACTED

A. *Hospital-Doctor (H.F. 21),* an Act relating to pathology and radiology services in hospitals, became law on April 5, 1957. This Act embodied the terms of the Joint Declaration entered into between the Iowa State Medical Society and the Iowa Hospital Association. There were two minor amendments which provided that the Act did not affect malpractice liability or the practice of dentistry.

B. *Medical License Revocation (H.F. 582)* authorizes the Board of Medical Examiners to revoke or suspend medical licenses where it is found, after notice and hearing, that the licensee was guilty of any of the grounds which for many years have been enumerated in the Code as warranting the revocation or suspension of a professional license. This law is a condensed version of the Medical Disciplinary Act of the State of Washington and provides complete safeguards in protecting the rights of the licensee. Where a license is revoked or suspended, the licensee may appeal either to the District Court of Polk County or of the county of his residence, as he elects, and both the law and the facts will be redetermined by the Court on appeal. This new law does not change existing procedures whereby the Attorney General or County Attorney may institute license revocation proceedings in the District Court.

C. *Resident Physician's License (H.F. 582)* liberalizes existing law pertaining to the issuance of a temporary "resident physician's license." The Attorney General has ruled that an intern does not require a medical license, but that a resident physician is required to be licensed. The "resident physician's license" authorizes the licensee to serve as a resident only, under the supervision of a licensed practitioner of medicine and surgery and in an institution approved for this purpose by the Medical Examiners. The license is valid for one year and may be annually renewed at the discretion of the Medical Examiners for a period not to exceed six additional years. The licensee must be a graduate of a medical school, but is no longer required to be a graduate of an *approved* medical school. The Medical Examiners may revoke the license should they determine either that the caliber of work done by the licensee or the type of supervision being given such licensee does not conform to reasonable standards that they have established.

D. *Licensure of Foreign Trained Physicians (the same Act)* does not change existing licensure requirements where the applicant is a graduate of an "approved" medical college. However, where the applicant is a graduate of a medical college which has been neither approved nor disapproved, he may be licensed upon presenting his diploma and complying with the following additional requirements: (1) presenting the recommendation of the Educational Council for Foreign Medical Graduates, Inc., and (2) completing three years of training as a resident physician, which training has been approved by or is acceptable to the Board of Medical Examiners.

In addition to the foregoing, all applicants, whether foreign-trained or presenting diplomas from approved schools, are required (1) to pass an examination prescribed by the Medical Examiners, (2) to complete one year of internship in a hospital approved by the State Board of Medical Examiners, (3) to be a citizen of the United States or to have legally declared the intention of becoming a citizen, and (4) to pass the basic science examination.

The legislature was particularly desirous of relieving the current severe shortage of medical personnel for Iowa's mental health institutions. Under *H.J.R. 24* a special joint committee of legislators was created "to study and observe the results of the State of Iowa with respect to the critical problem of obtaining professional staff, particularly medical doctors, psychiatrists, psychiatric nurses and psychologists for the Board of Control institutions." The resolution further provides that "the committee shall give particular attention to the adequacy of the statutes of the State permitting the employment of foreign members of such professions without lowering the professional standards required for practice of such professions in the State."

E. *Vendor Payments (H.F. 392).* Under the law, Social Welfare payments for medical care will be increased as a result of federal matching funds, and payments will be made *direct to the physician,* rather than to the patient. Funds will be available for recipients of Old Age Assistance and Aid to the Blind at the rate of $6.00 per month per recipient. In the case of Aid to Dependent Children, funds will be available at the rate of $3.00 per month for each child.

F. *Mental Health.* There was great interest in the field of mental health legislation, and considerable progress was made in this area. Approximately $165,000.00 was appropriated to strengthen

the Department of Psychiatry at the State University of Iowa. In addition, *H.F. 183* created a fund of $75,000.00 for research in mental health under the direction of the medical director of the Psychopathic Hospital. A fund of $250,000.00 was also created for the employment of psychiatrists and other trained personnel at Board of Control institutions.

H.F. 25 doubled the permissible tax levy for the county insane fund. This was primarily designed to strengthen the mental health centers now located in approximately 10 counties.

S.F. 249 provides that "the superintendent or executive officer of each of the institutions under the Board of Control shall appoint a business manager with the approval of the Board."

H.F. 136 authorizes the transfer of prisoners in need of physical or mental treatment to institutions where such treatment can be administered.

H.F. 544 permits a mentally ill person on parole or on convalescent leave to obtain a driver's license if "the medical staff and superintendent of the institution in which the person has been hospitalized recommend the issuance of said license."

H.F. 554 eliminates the requirement that the Board of Control send a list of mentally ill persons to the Clerk of each District Court.

H.F. 138 permits the appointment of nonmedical personnel as superintendents at Woodward and Glenwood. This undesirable legislation was provoked by the present shortage of psychiatrists.

H.F. 180. This bill, which would exempt employees of institutions under the Board of Control from the Division of Personnel, did not pass as such. However, the substance of the measure was incorporated in one of the appropriation bills which was enacted into law.

G. *Vocational Rehabilitation (H.F. 242).* The legislature demonstrated sincere interest in the rehabilitation of handicapped persons. Appropriations for rehabilitation were increased, and the vocational rehabilitation provisions of the Code were modernized.

H. *Hospital Legislation (H.F. 317)* authorizes county hospitals to purchase liability insurance, and *H.F. 508* authorizes county hospitals to lease facilities no longer required for hospital purposes to the county or any political subdivision thereof for any public purpose.

I. *Attorney for Department of Health (S.F. 83)* authorizes the Attorney General to appoint assistant Attorneys General to perform and supervise the legal work of most of the state departments, including the Department of Health.

J. *Pharmacy Bill (S.F. 68)* requires annual licenses from the State Pharmacy Board for drug stores and wholesale drug dealers, and provides for revocations. This law does not apply to physicians.

K. *Nursing Homes (H.F. 572)* provides for licensing, inspection and regulation of nursing homes and custodial homes with provisions for penalties.

II. LEGISLATION WHICH FAILED

Among the bills which failed to become law are the following of special interest to physicians:

A. *Board of Health Reorganization (H.F. 144)* would have given actual administrative authority to the State Board of Health, which under present law is only advisory to the Commissioner of Health. It would also have provided for a Board consisting of four medical doctors and seven representatives of other groups or professions interested in the health field. Amendments filed on behalf of chiropodists, optometrists and chiropractors created problems which resulted in the death of this Bill.

B. *Chiropractic Bills.* No action was taken on the two chiropractic bills. Indeed they failed to reach the calendar in either House. *H.F. 92* would have required chiropractors to have two years of study in an accredited college, and *H.F. 189* would have required chiropractors to attend two-day educational seminars annually as a prerequisite to license renewal.

C. *Dispensing opticians licensure (S.F. 252).* This proposed legislation would have required the licensing of all "persons who prepare and dispense lenses, spectacles, eyeglasses and optical devices to the intended user thereof only on the written prescription of a physician or optician duly licensed to practice his profession." No action was taken on this measure. It failed to reach the calendar in either House.

D. *Physical therapist licensure (S.F. 367).* This Act to provide for the licensing and qualifications of physical therapists failed to reach the Senate calendar.

E. *Coroners. H.F. 397* and *S.F. 413* were similar but not identical bills pertaining to the qualifications and fees of coroners. Both would have required a coroner to be a licensed physician. Although meritorious, these bills did not receive serious consideration because of the volume and press of other health legislation.

F. *Mental Health.* Despite the interest and progress in mental health legislation, several important measures in this area did not become law. The most significant was *H.F. 181,* which would have established a qualified psychiatrist as director of mental health, with authority to supervise the operations of the six State mental health institutions, and to coordinate other mental health activities in the state. This measure overwhelmingly passed the House but fell short in the Senate by four votes of the two-thirds majority needed to call it up for consideration in the closing days of the session.

Other measures in the so-caled "mental health package" likewise failed of enactment. These are *H.F. 178,* mental health capital improve-

ments; *H.F. 179,* pertaining to the operation of institutions under wartime conditions; *H.F. 182,* which would have redefined the purposes of the State Psychopathic Hospital and its role as a mental health training and research center; and *H.F. 184,* which would have changed the name of the Psychopathic Hospital to Iowa Mental Health Training and Research Center.

H.F. 501 would have authorized the temporary restraint of persons of apparent unsound mind in a county hospital or institution until examined, within 48 hours. This bill passed the House without dissent, but did not reach the Senate calendar prior to adjournment.

H.F. 401, an Act to standardize commitment and release procedure for the mentally ill did not receive attention because of the press of other mental health legislation.

G. *O.M.V.I. (H.F. 257).* No action was taken on this bill which would have required that a person give his consent to a chemical test of blood, saliva, etc., to determine alcoholic content of blood in O.M.V.I. cases and would have required a one-year's suspension of driver's license for failure to take such a test.

PHYSICS AND CIRCULATORY DISORDERS

The prinicple of physics on which the airplane's wing and many hydraulic devices operate helps explain the development of various circulatory disorders, according to Dr. Meyer Texon, of the NYU Postgraduate Medical School.* It is known as Bernoulli's theorem. In brief, fluid in motion possesses energy because of its velocity and its pressure, and when velocity increases and static pressure decreases, as on the inside of a blood vessel, a suction effect is created at points where vessels curve or branch. The suction tends to pull the insides of the vessel wall toward the center and causes the inner layer of the wall to thicken. The inner layer of the plaque becomes detached, and the raw or ulcerated surface gathers blood elements to form a thrombus, which eventually occludes the vessel. Sometimes these ulcerated spots tear and allow the vessel to hemorrhage.

It is Dr. Texon's belief that this mechanism accounts for many cases of acute coronary occlusion with myocardial infarction.

* Texon, M.: Hemodynamic concept of atherosclerosis, with particular reference to coronary occlusion. AMA Arch. Int. Med., **99**:418-427, (Mar.) 1957.



At the ISMS Annual Meeting, a technician took a blood sample from Dr. F. B. O'Leary, of Sibley, for a microhematocrit determination, while Dr. R. N. Larimer, of Sioux City, looked on.

SENIOR DAY AT SUI COLLEGE OF MEDICINE

Students at the SUI College of Medicine and their wives made up an audience of more than 200 persons at the Third Annual Senior Day program put on by the Iowa State Medical Society in Iowa City on May 4. An afternoon of short talks and question-and-answer periods was climaxed by a social hour, a banquet and a dance.

Dr. R. N. Larimer, of Sioux City, opened the afternoon program by outlining the structure of organized medicine and describing the services that it is equipped to provide to its member physicians and to the public. He urged the students to plan on participating in county, state and national organizations. Dr. William M. Sproul, of Des Moines, spoke on "Human Relations and Public Relations," pointing out that the latter of those two depends upon the former. He urged the students to recognize the fact that there is a difference between publicity and public relations, and stressed that all the high-powered public-relations experts that organized medicine might hire can do less for the individual doctor than the doctor can do for himself. Mrs. J. F. Gerken, of Waterloo, president of the Woman's Auxiliary to the Iowa State Medical Society, gave a particularly clear outline of the purposes and activities of her organization. "Remember," she told the students, "that the public will expect your wife to know the answers to some of its problems and that she will have many contacts through which she may be able to help you achieve the civic improvements in which you are interested."

Dr. F. C. Coleman, of Des Moines, reviewed the changes that have taken place in the public's attitude toward health legislation. At one time, the public was willing to wait for individual doctors and medical societies to initiate proposals for health laws, and there were no other organized groups exerting pressure for such legislation. Now, doctors and medical societies must grasp leadership in that field, for it certainly won't be tendered to them, and in many cases they must oppose ill-advised proposals that have been originated by powerful lay groups. Dr. Coleman reviewed the legislative set-up at all levels of organized medicine and emphasized the superior utility of grass-roots lobbying. In particular, he explained how the system of county legislative contact men ties in with regional and national legislative efforts.

Dr. R. E. Smiley, of Mason City, explained the organization and functioning of Blue Shield, calling attention to the ways in which it is preferable to closed-panel schemes such as Kaiser-Permanente and to any scheme for compulsory health insurance under federal sponsorship. Dr. Lynn E. Frink, of Reinbeck, gave the young men a series of practical suggestions about the way to go about picking a location for practice and about the details of opening an office. He urged them to seek the assistance of their state medical society. In the address that he gave at the banquet, Dr. Fred Sternagel, of West Des Moines, president of the Iowa State Medical Society, defined the art, as distinguished from the science, of medicine, and pointed out that doctors cannot be maximally beneficial unless they practice both.

Dean Norman B. Nelson paid glowing tribute to the State Medical Society and, in particular, to the speakers for their really altruistic efforts to help the students. At the conclusion of his remarks, the audience paid a standing tribute to the Society and to the individuals who were present as its representatives.

ROCKY MOUNTAIN CANCER CONFERENCE

Following is the program of the Eleventh Annual Rocky Mountain Cancer Conference, which is to be held at the Shirley-Savoy Hotel, Denver, July 10 and 11, 1957.

Wednesday, July 10

9:30 a.m. SYMPOSIUM ON CANCER OF THE STOMACH —L. Henry Garland, M.D., San Francisco; Joseph Bank, M.D., Phoenix; Alton Ochsner, M.D., New Orleans; and Joseph Cunningham, M.D., Birmingham.
12:00 noon LUNCHEON AND ROUND TABLE DISCUSSION
2:00 p.m. "Pathology of Ovarian Tumors"—Arthur T. Hertig, M.D., Boston
2:30 "Management of Benign Intrathoracic Lesions"—Richard M. Overholt, M.D., Boston
3:00 "Cancer of the Thyroid"—Dr. Ochsner
3:30 "Diagnostic Problems of Cancer of the Pancreas"—Dr. Bank
6:30 Cocktail Hour and Banquet
Speaker: Kenneth McFarland, General Motors Corporation

Thursday, July 11

9:30 a.m. SYMPOSIUM ON CANCER OF THE LUNG—Dr. Overholt; Dr. Garland; Seymour Farber, M.D., San Francisco; and Dr. Cunningham
12:00 noon LUNCHEON, ROUND TABLE DISCUSSION
2:00 p.m. PANEL ON CYTOLOGY—Dr. Cunningham; Dr. Farber; and Dr. Hertig

Plan to attend the 1958
ISMS Annual Meeting
Veterans Memorial Auditorium
Des Moines
April 20-23

President's Page

Twelve years ago, the Iowa State Medical Society entered the health-prepayment field by offering its Blue Shield Plan on a non-profit basis. Indeed, in guaranteeing full medical service to subscribers whose incomes were below a certain level, we participating physicians undertook to accept less than our usual fees. All this was intended to meet the threat of socialized medicine by showing the people how to budget for medical care the American way.

Over the years, this plan has become the leader in its field and has done a great deal to alleviate the threat of compulsory health insurance. But as we survey the situation today, it is clear that if we do not make changes in the Plan in accordance with the times, or recognize public demands, we shall lose everything that we have gained.

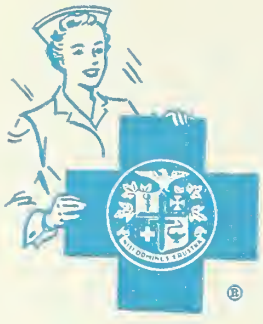
To meet this challenge, we have had to decide, for the present at least, what constitutes a realistic income level beyond which people can pay the usual costs of medical care. We have set that figure at $3,600. For those with incomes in excess of $3,600, Blue Shield has now been authorized to write a contract for which there will be no fixed fee schedule. This program will enable those subscribers to receive full-service benefits and will provide the physician with the fees that he has been accustomed to charge.

Blue Shield's job is not yet finished, for the spectre of socialized medicine still haunts us. We shall have to cooperate intelligently and unselfishly, if our Plan is to protect the dignity of individual enterprise. It is clear that this program cannot continue to maintain leadership in a competitive field unless we work together more closely than ever before.

The policy-making body of our Society has charted a course for Blue Shield to follow. The success of the new undertakings will depend upon each of us.

Fred Sternagel

President



Blue Cross
Blue Shield



The No-Fee-Schedule Contract

The 1957 House of Delegates approved the continuance of a Blue Shield contract providing full service for subscribers having family incomes below $3,600 and providing indemnity coverage for those with higher income levels. It also approved the no-fee-schedule concept for those who wish to be sure of having their doctor bills paid in full for the benefits listed in the Blue Shield certificate, but are ineligible for full coverage under the $3,600 contract. Further, permission was granted for Blue Shield to incorporate various deductible features in the no-fee-schedule offering.

These actions place heavy responsibilities upon the medical profession. The doctor will have either to treat each patient as though no insurance were involved, and bill according to the patient's ability to pay, or to adopt the uniform-fee approach, regardless of the patient's economic status. And before a no-fee-schedule program is sold in a given community, there should be a mutual understanding between the county medical society and the Blue Shield Claims Department as to the policy that is to be followed.

This no-fee-schedule program can work only if the Iowa physician has the courage and foresight to guide and control it for the best interests of the patient and the medical profession alike. Doctors will need to cooperate with Blue Shield to uncover the unscrupulous patient who, through failure to disclose information, expects to take financial advantage of the Plan. It is the participating physician who finally underwrites his Blue Shield Plan. He, therefore, has a definite interest in protecting its financial welfare.

This spirit of cooperation will be much more essential in the future than it has ever been in the past, for the financial stake in each case will be increased under the no-fee-schedule system.

Wisconsin has had satisfactory results from such a plan, and we have every reason to believe that Iowa physicians will achieve similar success.

Each physician can be a great asset to Blue Shield by helping to sell this no-fee-schedule plan to the industrial groups in his community. It is organized medicine's way of meeting the costs of medical care on a realistic basis.

THE JOURNAL *Book Shelf*



BOOKS RECEIVED

SURGICAL PHYSIOLOGY, by *Harry A. Davis*, M.D. (New York, Paul B. Hoeber, Inc., 1957. $20.00).

THERAPEUTIC EXERCISE FOR BODY ALIGNMENT AND FUNCTION, by *Marian Williams*, Ph.D., and *Catherine Worthingham*, Ph.D. (Philadelphia, W. B. Saunders Company, 1957. $3.50).

PHYSICAL DIAGNOSIS, by *Simon S. Leopold*, M.D. (Philadelphia, W. B. Saunders Company, 1957. $9.00).

GIFFORD'S TEXTBOOK OF OPHTHALMOLOGY, by *Francis Heed Adler*, M.D. (Philadelphia, W. B. Saunders Company, 1957. $8.00).

MODERN THERAPY IN NEUROLOGY, by *Francis M. Forster*, M.D. (St. Louis, C. V. Mosby Company, 1957. $12.00).

THE RIDDLE OF STUTTERING, by *C. S. Bluemel*, M.D. (Danville, Illinois, The Interstate Publishing Company, 1957. $3.50).

MEDICAL SERVICE FOR RURAL AREAS, by *William A. Massie*. (Cambridge, Massachusetts, Harvard University Press, 1957. $1.35).

RYPINS' MEDICAL LICENSURE EXAMINATIONS, EIGHTH EDITION, ed. by *Walter L. Bierring*, M.D., with the collaboration of a review panel. (Philadelphia, J. B. Lippincott Company, 1957. $10.00).

BOOK REVIEWS

PRACTICAL DIAGNOSIS AND TREATMENT OF LIVER DISEASE, by *Carroll Morton Leevy*, M.D. (New York, Paul B. Hoeber, Inc., 1957. $8.50).

Dr. Leevy presents us with a new monograph on the liver. The first few chapters deal with diagnosis, liver function tests, differential diagnosis and treatment. The last few chapters deal with the principles of the several types of liver disease such as circulatory, nutritional and obstructive conditions. The book is printed in large type, and is succinct and clear. Frequent tables, graphs and illustrations sprinkle its pages. New topics are introduced by headings in clear, boldface type.

The most prominent feature of the book is its brevity. It is much smaller that the standard textbooks on liver disease. The compactness of the volume, however, isn't altogether advantageous. Topics are dealt with in broad, general terms, and though one can read the basic facts on a particular topic in a hurry—and most of the basic facts are included—the minute details that are included in other texts have been omitted. Thus, as a reference book, it is less valuable to the thorough student than it might have been. Data on such topics as hepatic coma, which are usually dealt with in a body, are scattered, and one must search for them in several sections.

The book is therefore admirable for the casual student of liver disease, but too brief for the serious student.—*Daniel A. Glomset*, M.D.

GENERAL UROLOGY, by *Donald R. Smith*, M.D. (Los Altos, California, Lange Medical Publications, 1957. $4.50).

This is a textbook of general urology presented in outline form and designed primarily for the instruction of medical students at the University of California. The coverage of general urology is very complete, and the outline form facilitates its use as a reference book by both clinicians and students.

The sections entitled "Injuries to the Urinary Tract" and "The Neurogenic Bladder" are outstanding. There are many illustrations, and the drawings are uniformly excellent. The lithographed reproductions of x-rays, however, leave much to be desired, and in many instances they fail adequately to demonstrate the lesions.

On the whole, this is a very adequate textbook for the student and a good reference work for the medical practitioner.—*John S. Greenleaf*, M.D.

CLINICAL EXAMINATIONS IN NEUROLOGY, by members of the Section of Neurology and the Section of Physiology, Mayo Clinic and Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota, Rochester. (Philadelphia, W. B. Saunders Company, 1956. $7.50).

This remarkable book contains the information the Mayo Clinic faculty considers essential in the training of doctors in the discipline of neurology. Sixteen authors made specific contributions to this volume. In the dedication, Dr. MacLean indicates that it is the intention of the authors for this book to be regarded as "a series of working blueprints and not as a course of lectures delivered from a remote podium." In the preface, Dr. Eaton further emphasizes the importance of mastering the technic of clinical neurologic examination and, especially in a clinic group such as his, the need for consistency in the recording of neurologic information. Much attention is devoted to the significance of the tests described, as they relate to anatomy, physiology and disease.

The text material—345 pages of it—includes 17 chapters and covers the material that is usually included in any outline of a clinical examination of the nervous system. In addition, however, special attention is given to the specific forms used at the Mayo Clinic. There is a special section on neuro-ophthalmology, and additional sections on electroencephalography and electromyography, and one on biochemical and pharmacologic aids in neurologic diagnosis. The text is well illustrated and is well organized for reference purposes.

There can be no question about the value of this book for the fellows of the Mayo Foundation who are beginning their assignments in neurology. Further, the book cannot help being extremely useful to anyone who is interested in neurology and who will take the

trouble to study and use it. I should warn, however, that it is not the type of text that the busy practitioner can pick up for a "quick" review of the neurologic examination. That is not to say that any doctor interested in the neurologic examination of patients would fail to profit from the information that has been gathered together in this volume. I would urge that the book be made available to interns through hospital libraries, and I might suggest that it would make a fine present for the medical school graduate.

Unfortunately, there is no "easy" method of conducting a neurologic examination, as this valuable text attests. —*John T. Bakody,* M.D.

1956-1957 YEAR BOOK OF MEDICINE, ed. by *Paul B. Beeson,* M.D., *Carl Muschenheim,* M.D., *William B. Castle,* M.D., *Tinsley R. Harrison,* M.D., *Franz J. Ingelfinger,* M.D., and *Philip K. Bondy,* M.D. (Chicago, The Year Book Publishers, Inc., 1956. $6.75).

In traditional Year Book style, the literature from May, 1955, to May, 1956, has been culled for new contributions by an expert in each field, and the articles have been abstracted. Although the abstracts sometimes may not be complete enough to satisfy the reader, he can get enough of the gist of each article to give him a basis for deciding whether or not he wants to get the original from the library.

The most worthwhile paragraphs to read are the editorial comments by the reviewers. They enhance the information given by the authors of the articles, sometimes agreeing and sometimes not. From those comments, one gets a perspective that one wouldn't have if he read the original articles. Reading such a volume as this is an excellent way of discovering what's new in each of the rapidly expanding subdivisions of internal medicine.—*Charles H. Gutenkauf,* M.D.

THE FIGHT FOR FLUORIDATION, by *Donald R. McNeil.* (New York, Oxford University Press, 1957. $5.00).

Because there have been many arguments over the advisability of fluoridating public water supplies in Iowa, many doctors in this state are likely to find this book an interesting one. The author has covered the subject in great detail, particularly as regards experience in the state of Wisconsin and in the city of Seattle.

It is highly recommended for any reader who desires to have the complete background on the subject. —*Everett M. George,* M.D.

THE DOCTOR AS A WITNESS, by *John Evarts Tracy.* (Philadelphia, W. B. Saunders Company, 1957. $4.25).

Most physicians have had no legal training and look upon an appearance in court with misgivings. This volume, prepared by a professor of law, succinctly offers background knowledge of legal procedures. It also contains advice regarding court routine not only in civil and criminal cases but also in workmen's compensation proceedings. The author discusses compensation of the physician-witness for the time he spends in the courtroom, and takes up the preparation the doctor should make for his appearances. He outlines proposed improvements in the law as it relates to the doctor's testimony.

This book will prove a valuable addition to any doctor's library.—*Everett M. George,* M.D.

DORLAND'S ILLUSTRATED MEDICAL DICTIONARY, TWENTY-THIRD EDITION, ed. by *Leslie Brainerd Arey,* Ph.D., *William Burrows,* Ph.D., *J. P. Greenhill,* M.D., and *Richard M. Hewitt,* M.D. (Philadelphia, W. B. Saunders Company, 1957. $12.50).

Because Dorland's is generally accepted as the standard American medical dictionary and because the twenty-third edition is thoroughly up to date, every physician who now has occasion to buy a medical dictionary will want to be sure to get this one.

The recent advances that have been made in medicine—particularly in chemotherapy and antibiotics—have required thorough revision of the volume, and the quite constant use that I have made of it during the month or six weeks since its appearance leads me to think that the editors have overlooked none of the new terminology. Trade names of products, properly identified as such, are listed in addition to scientific designations.

The format of the book has been changed somewhat, with the result that the new edition is thinner and more convenient to handle than were its predecessors. —*Edw. W. Hamilton*

PSYCHOLOGIC PRINCPLES OF SURGERY, by *Leo M. Zimmerman,* M.D., and *Rachmiel Levine,* M.D. (Philadelphia, W. B. Saunders Company, 1957. $15.00).

As developments take place in the field of surgery, it becomes increasingly important for the surgeon to have a sound knowledge of physiologic principles so that he may adequately comprehend and apply the new discoveries. In the past, most of such data could be found only in basic texts in physiology that had been written for medical school students. This book, however, has been prepared for the practicing surgeon. It is up-to-date, and its organization is such as to make it maximally useful as a rapid-reference work.

The 36 chapters cover the subject, from "Metabolic Changes Associated With Surgery" to "Surgical Physiology of the Central Nervous System." Many of the newer concepts in surgery, such as transplantation of tissue, body fluids and electrolytes, significance of plasma proteins, surgery of the newborn and congenital heart disease, are taken up in considerable detail.

The clinical pictures associated with the various body systems are correlated with basic physiology in such a way as to make the volume a valuable addition to the library of any practicing surgeon.—*Charles C. Edwards,* M.D.

Carlson School for Cerebral Palsy announces two informal summer sessions for ambulatory Cerebral Palsy patients.

First session: June 15-August 1; second session: August 1-September 15.

Located on ocean; swimming pool; supervised therapy.

For information write to Carlson School, Pompano Beach, Florida.

THE DOCTOR'S BUSINESS



Borrowing Funds for A Short-Term Trust

HOWARD D. BAKER

WATERLOO

If a doctor lacks sufficient income-producing assets to set up a short-term (Clifford) trust by the means that were described on the Doctor's Business page of the May JOURNAL, he may find it advantageous to borrow funds so that he may purchase property for that purpose. The note or mortgage that he has given in exchange for the loan will remain his individual liability, and for tax purposes he can deduct his interest payments from his gross income. The income-producing property that he has purchased will, however, be owned by the trust for at least 10 years, and the rentals that it earns will accrue to the benefit of the trust.

The primary restriction in such an arrangement will be that the trust can make no payments toward the discharge of the obligation. Such payments from the trust would be from income and would invalidate it. Yet, in addition to paying the interest, the grantor of the trust could—and no doubt would—make payments on the principal during the operation of the trust. And since the property of the trust would revert to him at the end of 10 years, the grantor would have created an investment program and have increased his net worth to the extent of such principal payments.

The creation of such a trust and the management of it are, of course, legal procedures in which the doctor will need more or less constant advice and assistance from his attorney.

To illustrate the operation of a trust created from borrowed funds, let us assume that the grantor has a taxable income of $36,000 in a top bracket of 50 per cent. He has four minor children who have no income and who will share equally in the trust. Since the doctor has no income-producing assets available for the trust, he negotiates a $40,000 loan bearing interest at five per cent annually. He then invests that $40,000 in securities which will return an average of six per cent, and he transfers the securities to the trust for the benefit of his four children. The value of the gift is $11,643.24 for tax purposes, and using the $3,000 exemption for each child, he can eliminate all gift tax on the creation of the trust. Following is a tabulation designed to summarize his computations for the first year.

$40,000 BORROWED AT 5 PER CENT, AND INVESTED IN TRUST TO YIELD 6 PER CENT

	Grantor	*Trust*
Net Income	$36,000	$2,400
Deductible Interest on Borrowed Funds	2,000	—
Taxable Income	$34,000	$2,400
Federal Income Tax	11,400	—
Income—After Tax	$22,600	$2,400

Now if the doctor had not borrowed the $40,000 and set up the trust, his income after tax would have been $23,600. Thus, by creating the trust he would have spent just $1,000, but would have accumulated $2,400 for his children. Over the 10-year period, he would expend $10,000 and would have produced $24,000 income. Further, it is not improbable that appreciation of the property in trust would have partially, if not completely, offset the $10,000 cost of the grantor.

The gain on such a transaction will vary with the ratio between the rate of interest the doctor pays for the borrowed funds and the rate of yield the trust receives from the investment, and also will depend upon the tax bracket that is applicable to the doctor's income. An arrangement such as this is tailor-made for the physician who is in a high tax bracket, but has no available assets with which to set up a short-term trust. As was pointed out last month, the short-term trust offers important tax savings opportunities. Obviously, a man can profit more greatly from it if there is no necessity of his borrowing funds to create the trust, but—provided that he can borrow at a reasonable rate—it still has possibilities for the man who has previously accumulated no property.

Iowa Academy of General Practice

VACATION

Are you really going to take a vacation this year?—We mean you, the physician who practices alone in a small community.

The word *vacation* is derived from the Latin term *vacatio*, and Webster defines it as "a being free from duty or service; a period for rest and recreation." Many physicians, especially the so-called "country doctors," never take vacations. Their love for their profession and their loyalty to their patients make them martyrs to Medicine. Perhaps they have at times left their practices to take postgraduate work, and they have assured themselves that such a change of activity constituted a vacation. But it is not. Others, year after year, plan to take a real rest, but at the last minute postpone doing so.

The physician, like everyone else, needs occasionally to enjoy the "state of being free from duty or service," so that he can relax from stress and strain. If he were to ask his patients, they would all advise and insist that he take a vacation, unless, of course, they anticipated having immediate need for his services. Thus, it would seem, the only problem is that of arranging for a colleague to "cover" one's practice. Many of the smaller Iowa towns have only one physician, but doctors who are thus located can arrange for men from surrounding towns to help them temporarily. If, on the other hand, a solo practitioner waits for a time when no babies are about to be born, when no operations will be necessary and when his postoperative patients have all convalesced, he'll never get away.

The physician should take a vacation not only for the sake of the rest that he desperately needs, but also to be, at least briefly, a more nearly ideal husband and father. Most physicians' families develop and mature without the companionship that they ought to have, but their situation should not be made any worse than necessary in that regard. You should take a vacation so as, in part at least, to pay some attention to your wife, in recompense for the times when she has had to eat dinner alone, or has had to serve as both host and hostess to invited guests. Equally much, your children need reassurance about your love for them. You need to make up for the Dads' Night that was put on by your son's Boy Scout troop and that you couldn't attend, for the games in which your boy participated but which you were unable to see, and for your daughter's banquets and recitals that you had to miss because you were the whole town's physician as well as her father.

Physician, take that vacation! Be free from duty, and be a husband and a father for at least a week or two out of the year.

NURSING SCHOOL ADMISSIONS DECLINE

Although the admissions to schools of practical nursing remained steady, the number of new students entering schools of professional nursing dropped last year, from 46,498 to 45,839, Mr. John H. Hayes, chairman of the Committee on Careers of the National League for Nursing, has announced.

This was the first time since 1952 that admissions to these schools declined and thus failed to keep pace with the steady growth of the college-age population. Over the period 1952 to 1955, about four per cent of the girls in this age group had been entering nursing schools, and approximately 46,700 had been expected to enroll.

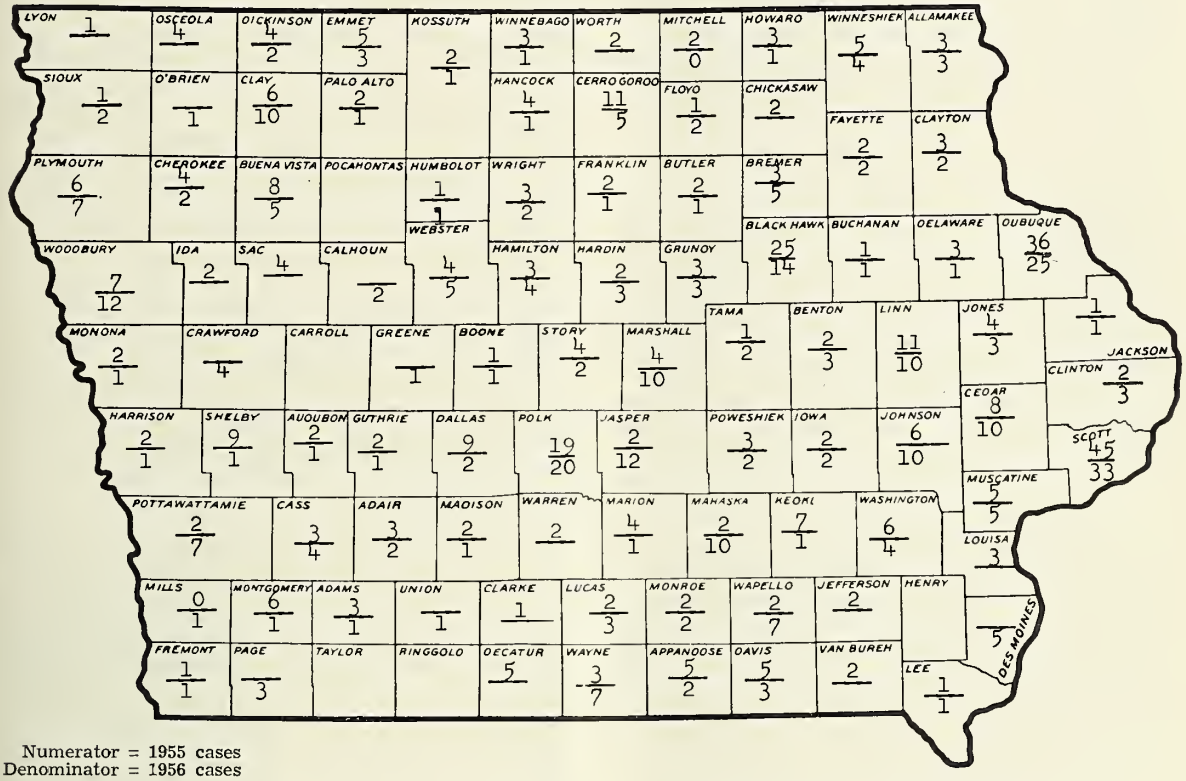
Practical nursing programs—usually one-year courses offered by hospitals, community agencies and vocational schools—admitted some 15,500 in the academic year 1956, a number close to that of the previous year. Students graduated last year from professional nursing schools totaled 29,591, and from practical nursing programs about 10,500.

In only one type of basic nursing education program did 1956 admissions exceed those of the preceding year, Mr. Hayes said, and this was in the college or university program offering a baccalaureate degree. These programs, which are four to five years in length, admitted 7,145 new students, compared with 6,985 in 1955. Although this was the smallest increase in admissions to college nursing programs in recent years, it indicates a continuation of the growing interest in college and university education for a nursing career.

STATE DEPARTMENT OF HEALTH

Edward D. Zimmer
COMMISSIONER

HUMAN BRUCELLOSIS IN IOWA, 1956



Numerator = 1955 cases
Denominator = 1956 cases

During 1956, Iowa physicians reported 360 human cases of brucellosis. The county distribution of those cases, as well as of the 1955 cases, can be found on the accompanying map.

About three-fourths of the cases occurred in persons 20 to 50 years of age, perhaps because persons in that age group are most likely to have come into close contact with infected animals. Almost 90 per cent of the cases occurred in males. Similarly, the sex differential reflects the fact that men and boys have more contact with livestock than women and girls do.

In order to prevent human cases of brucellosis, the reservoir of animal brucellosis must be eliminated.

SALMONELLA READING INFECTION

The editors of the JOURNAL made a mistake last month (May) by deleting the word *reading* from an article submitted by the Department of Health on an outbreak of a new type of Salmonella infection in 20 states.

The Department wishes to have it emphasized that though the incidence of salmonellosis in Iowa has not as yet become alarming (5 cases in March, as against 18 in March, 1956; and 8 cases in April, as against 2 in April, 1956), this Salmonella *reading* infection, with sudden increase in incidence and with a severe type of illness, is definitely of concern to public health workers in Iowa. The Department is asking that all physicians and

hospitals immediately report known or suspected cases of this infection, and that Iowa laboratories that isolate *any* Salmonella cultures submit them to the State Hygienic Laboratory for confirmation.

MORBIDITY REPORT FOR MONTH OF APRIL

Disease	1957 Apr.	1957 Mar.	1956 Apr.	Most Cases Reported From These Counties
Diphtheria	2	1	2	Lee
Scarlet Fever	143	239	106	Polk, Jefferson, Woodbury
Typhoid Fever	2	1	4	Polk, Tama
Smallpox	0	0	0	
Measles	1272	1215	1285	Clay, Dubuque, Howard, Polk
Whooping Cough	8	10	37	Pottawattamie
Brucellosis	13	18	18	Montgomery, Clay
Chickenpox	521	1105	874	Dubuque, Polk
Meningicoccic Meningitis	1	0	0	Polk
Mumps	458	752	277	Des Moines, Polk
Poliomyelitis	1	0	6	Sac
Infectious Hepatitis	17	31	40	Allamakee, Polk
Rabies in Animals	24	46	35	Benton, Humboldt, Johnson, Scott
Malaria	0	0	0	
Psittacosis	1	0	0	Johnson
Q Fever	0	0	0	
Tuberculosis	30	44	27	For the State
Syphilis	101	79	49	For the State
Gonorrhea	53	66	45	For the State
Histoplasmosis	0	1	0	
Food Intoxication	0	0	0	
Meningitis (type undet.)	0	1	1	
Diphtheria Carrier	0	0	0	
Asceptic Meningitis	0	0	0	
Salmonellosis	8	5	2	Polk
Blastomyecosis	0	0	0	
Tetanus	0	0	1	
Chancroid	0	0	0	
Coxsackie B-5	0	0	0	
Encephalitis	2	0	2	Polk
Influenzal Meningitis	1	1	0	Marion
Amebiasis	6	3	1	Polk
Shigellosis	0	0	0	

POLIOMYELITIS IN IOWA, 1956

The following is the final tabulation of poliomyelitis cases in Iowa during the year 1956.

Though explanations of this sort have been printed in previous issues of the JOURNAL, perhaps it should again be stated that the exceptionally high ratio of 10 to 1 between non-paralytic and paralytic cases is attributable to at least two factors: (1) the administration of poliomyelitis vaccine in large amounts to children of ages 3 through 12 years, thus reducing the incidence of poliomyelitis, especially the paralytic type; and (2) the probability that a large number of the cases diagnosed as poliomyelitis were, in fact, an asceptic meningitis produced by coxsackie B-5 virus. About 70 cases originally reported as non-paralytic poliomyelitis were subsequently found to have been coxsackie B-5 infections, and the diagnoses were changed. If specimens for virus study had been obtained from more of these non-paralytic cases, more of them would have been removed from the poliomyelitis listing.

The Department is gratified to note that each year there are fewer cases of poliomyelitis that it has to classify as "unspecified." Physicians are making increased efforts to submit adequate information on their cases. Also, the Department is attempting each year to study all cases of poliomyelitis more and more intensively. As a part of that work, it is cooperating in a national study in which follow-up studies are done on every person who contracted poliomyelitis after receiving three or more poliomyelitis vaccine injections.

	Paralytic	Non-paralytic	Unspecified
1953	170	315	128
1954	525	694	226
1955	114	378	69
1956	45	491	44

POLIOMYELITIS CASES IN IOWA—1956

	Paralytic	Non-paralytic	Unspecified
Allamakee		4	1
Black Hawk	3	52	6
Boone		6	
Bremer		1	
Buchanan		4	
Butler		2	
Calhoun		3	
Carroll		2	1
Cedar		5	
Cerro Gordo	1	28	
Cherokee		3	1
Chickasaw	1	3	
Clay	1	8	1
Clayton		2	
Clinton	2	5	1
Dallas		8	
Davis		1	
Decatur		1	
Delaware		7	
Des Moines	2	1	
Dickinson			1
Dubuque	7	39	
Emmet	1		
Fayette		6	
Floyd		7	1
Franklin		7	1
Fremont	2		1
Grundy		2	
Guthrie		5	
Hamilton		2	
Hancock	1	7	
Hardin	1	6	
Harrison		4	
Henry	1		1
Howard		1	
Humboldt		1	
Ida			1
Iowa		1	
Jasper	2	9	
Johnson		12	
Jones		4	
Keokuk		2	
Kossuth		1	1
Lee	5	3	4
Linn	1	21	
Louisa	1		
Lucas		1	
Madison		3	
Mahaska		6	
Marion	1	8	
Mitchell		6	
Monona		1	
Monroe		1	
Montgomery			1
Muscatine		2	1
O'Brien			1
Osceola		3	
Page		5	2
Plymouth	1	2	2
Pocahontas		2	
Polk		96	
Pottawattamie	8	6	2
Poweshiek		2	1
Ringgold		1	
Sac			1
Scott	1	2	
Sioux		2	1
Story		12	7
Tama		2	
Van Buren			1
Wapello		1	
Warren		6	
Washington		1	
Wayne	1	4	
Webster		10	1
Winnebago		1	
Winneshiek		2	
Woodbury	1	14	1
Wright		3	
TOTAL	45	491	44

Iowa Maternal Mortality, 1953-1954

Cases Edited and Summarized by the Maternal Mortality Reviewing Board

CARDIAC DISEASES

CASE NO. 39

This patient (age 20; para 0; congenital heart) had never been in cardiac failure before this pregnancy. A congenital heart condition was found at the first prenatal examination, and the patient was referred to an internist for evaluation. He made a diagnosis of Eisenmenger complex and kept the patient under close observation throughout her pregnancy.

No medicant was needed until 22 days before the patient's expected date of confinement, when she developed an upper respiratory infection and went into heart failure. She was adequately treated. She went into spontaneous labor 10 days later, and delivered a 2,500 Gm. live baby under pudendal block.

During labor and delivery, the patient occasionally became cyanotic in spite of oxygen. After delivery, she became orthopneic, cyanotic and so apprehensive and emotionally upset that she was hard to handle. For this reason, she was allowed to go home on the tenth day, in the hope that she would become more settled. Her condition deteriorated, and she died on the sixteenth postpartum day.

The attending physician certified her death as having been due to her cardiac condition and that the pregnancy was another condition present, but not one that contributed to her death.

This death was related to pregnancy, but it was not preventable. In view of the fact that this patient had never been in cardiac failure before this pregnancy, it is felt that the pregnancy precipitated the cardiac failure and was responsible for the death.

CASE NO. 40

This patient (age 25; para 0; congenital heart) was found to have a congenital heart condition at the time of her first prenatal visit. She was followed regularly, and no untoward symptoms were noted until the thirty-fourth week of her pregnancy. At that time, she showed albumin, a rapidly progressing anemia, vaginal bleeding and cardiac decompensation.

She was hospitalized, and consultation was held. She was given heart stimulants and whole blood. Two days later, she went into labor, but her pains were of poor quality. Consultation was held, and it was felt that the uterus should be emptied at once. A section was done under gas anesthesia, and a 1,500 Gm. live baby was delivered. The placenta was separated, and there was profuse intrauterine bleeding. The patient died two hours after delivery. Autopsy confirmed the diagnosis.

This death was related to pregnancy, but it was not preventable. The status of a toxemia in the face of cardiac failure is hard to evaluate. Earlier delivery would have been of no help.

Questions: (1) Would rupture of the membranes and delivery from below have been preferable? (2) Was the choice of anesthetic good, or was local anesthetic considered?

CASE NO. 46

This patient (age 24; para 0; congenital heart) was congenitally deaf, and had been known to have had cardiac disease since the age of eight. She went into spontaneous labor about 10 days before the date of her expected confinement. Because X-rays showed a cephalo-pelvic disproportion, an elective section was done under pentothal cyclopropane and spinal. The infant was alive, and weighed about 2,200 Gm. The patient did well until the fifth postpartum day, when she suddenly expired.

An autopsy revealed an intraventricular defect, mural thrombi in the auricles, and thrombosis of the uterine and iliac veins.

This death was related to pregnancy, and though it was probably preventable from the obstetric standpoint, the patient's chances of longevity were poor. If the embolism that produced this death was from the deep pelvic veins, then the death was preventable. This patient probably should not have attempted pregnancy, but she did not seek medical advice prior to becoming pregnant.

Cardiac disease is seldom an indication for cesarean section. Cesarean section is more commonly followed by thrombophlebitis than is vaginal delivery.

Spinal anesthesia is not a wise choice for the cardiac patient.

CASE NO. 54

This patient (age 37; para 5; rheumatic heart disease) had had cardiac disease for some time. The attending physician did not see her until she was in labor at about four months. At that time she had myocardial failure, and death occurred immediately after the spontaneous delivery of a dead fetus.

This death was related to pregnancy, but it was not preventable. Since this patient had had a

previous decompensation of the heart, she was herself responsible for her lack of medical care. If a doctor had been attending her before she became pregnant, he should have considered sterilization.

CASE NO. 75

This woman (age 21; para 0; rheumatic heart disease) had been a patient of the attending physician since early childhood. Following a severe case of scarlet fever, she had had a rather severe murmur, but no functional disability. Because of her job, she did not consult her physician about her pregnancy until her fourth month.

Two months later, she had albuminuria and was confined to her bed at home for six weeks. Urinalyses done during this interval showed constant albumin. There was no edema. No blood counts were made, but the physician thought the patient was anemic and prescribed iron.

Six weeks before her expected date of confinement, the patient went into labor and delivered a 2,000 Gm. live infant spontaneously. The nursing notes state that the patient had difficulty in breathing and that she was cyanotic during labor.

The patient was placed on digitalis and a salt-free diet 24 hours after delivery. A blood count done at that time was reported as showing 2,100,000 red blood cells and 4.9 Gm. hemoglobin. Oxygen was started, and a consultation called. The consultant made a diagnosis of cardiovascular renal disease with cardiac failure, and recommended a small blood transfusion in addition to oxygen and digitalis. The patient showed no improvement, and suddenly expired on the fifth postpartum day.

This death was related to pregnancy, and it was preventable.

Both the cardiac condition and the anemia were apparently serious throughout this patient's prenatal period. Since her cardiac condition was of long standing, she should have had a complete evaluation by an internist or a cardiologist at the first opportunity after her pregnancy began, and certainly such an evaluation should have been made if her condition was serious enough to warrant bed rest.

CASE NO. 104

This patient (age 24; para 0; rheumatic heart disease) was known to have been in cardiac failure two or three years prior to her pregnancy. No untoward symptoms were noted until the fourth month, when she complained of dyspnea and was placed on a low-sodium diet. Two months later, she had a nonproductive cough, a few rales in the right base and edema of the ankles. She was given Crystodigin and Diamox, and was put at bed rest. Three weeks later, she was admitted to a hospital in labor. Consultation was held. She delivered a live baby weighing about 1,500 Gm. spontaneously, with local anesthetic and a few whiffs of drop ether.

On the third postpartum day, she had signs of more severe cardiac failure, and was adequately treated. She was dismissed on her twelfth postpartum day. Although the physician felt that her condition was satisfactory, her dismissal was influenced by economic considerations. Five days later, she went into severe cardiac failure and was returned to the hospital. Death occurred two weeks later.

This death was related to pregnancy, and it was preventable.

Having had cardiac failure, the patient should have been advised against pregnancy. Having become pregnant, it is possible that she should have been hospitalized throughout her pregnancy. Following the stormy pre- and postnatal course, the patient should have been kept in the hospital for a longer time, in spite of her economic situation.

CASE NO. 65

This patient (age 32; para 3; amniotic embolism) had had symptoms of early toxemia in her previous pregnancies. She reported for prenatal care in the fourth month of this pregnancy, and was seen regularly thereafter. At times she had some elevation of blood pressure and a trace of albumin.

In her ninth month, she had a little edema of the right leg. Two days after the date of her expected confinement, an elective induction was done because the patient had a backache and the physician thought that she was "ripe." This induction was accomplished by enema, 30 grains of quinine and 15 minims of pituitrin in divided doses over a period of two hours.

Labor began, and the membranes ruptured. Demerol 100 mg. and hyoscine 1/150 gr. were given, and drop ether was started. As the head was crowning, the patient collapsed. A live infant weighing over 4,500 Gm. was extracted by low forceps. The patient did not respond to emergency measures, and expired.

This death was related to pregnancy, and it was probably preventable.

This patient may have had a mild preeclampsia, if one can judge from the history that was given. Pituitrin is not a wise choice for an oxytocic agent, and there are certain individuals who are sensitive to it. The amounts given in this instance were large, and they were administered over a very short period of time. The indications for induction were rather weak, and labor would no doubt have started promptly following simple amniotomy.

CASE NO. 71

This patient (age 33; para 1; cerebral hemorrhage in the puerperium) had had no abnormal symptoms previous to this pregnancy. Prenatal care was adequate during the first part of the pregnancy. The patient had a weight gain of 25 pounds, and her blood pressure and laboratory findings

were normal throughout. She did not report to her doctor during the last six weeks of her pregnancy.

The patient went into spontaneous labor three weeks before the expected date of her confinement, and had an uneventful, spontaneous delivery under nitrous oxide anesthesia. On the morning following delivery, she was nauseated, she vomited, and she ate neither breakfast nor lunch. At 1:00 p.m. she complained of stiffness in her arms and inability to move them. No abnormalities were found upon examination. At 3:30 p.m., the patient complained of feeling chilly. Her blood pressure was 124/72 mm. Hg., with a pulse of 80 beats per minute. She was given 100 mg. of Demerol.

About an hour later, she became semicomatose and did not respond. Her right pupil was enlarged. Her reflexes were normal. The blood pressure was 164/90 mm. Hg., and a catheterized specimen of urine showed 1+ albumin and acetone. The CO_2 combining power was 46 volumes per cent. An internist was called in consultation, and a spinal puncture was done. The spinal fluid was pink, it contained red blood cells, and the total protein was 99 mg. At 7:30 p.m., the patient's blood pressure was 150/94 mm. Hg., and her pulse was 60. Neurologic surgery was considered. At 8:00 p.m., the patient had generalized twitching, and went into coma. Death occurred at 9:18 p.m. An autopsy revealed a rupture of an aneurysm, with cerebral hemorrhage.

This death was related to pregnancy, but it was non-preventable. In general this case was well managed, but there was a lapse in prenatal care in the last six weeks of the pregnancy, and for that reason one cannot definitely rule out toxemia.

CASE NO. 117

This patient (age 35; para 3; cerebral hemorrhage in the puerperium) had a negative obstetric history. A year before the present pregnancy, a diagnosis of cerebral hemorrhage due to a ruptured congenital aneurysm had been made.

In the sixth month of this pregnancy, she suffered a sudden fainting spell on the street and was hospitalized. The patient had no paralysis, and the spinal fluid was bloody. A diagnosis of subarachnoid hemorrhage was made.

The remainder of her pregnancy was uneventful. She went into spontaneous labor two weeks before the expected date of her confinement, and had an uneventful, spontaneous delivery, with no anesthesia. The placenta was expressed within five minutes, and ergotrate was given. Ergotrate was repeated because of some moderate bleeding during the first hour. Twenty-four hours after delivery, the patient was standing in the doorway of her hospital room, she suddenly became faint, collapsed and died immediately.

This death was related to pregnancy, and it was non-preventable. The relation of the patient's death to her pregnancy may be questionable, for she evidently had had an aneurysm before becoming pregnant. However, it must be recognized that there is a relationship between pregnancy and the rupture of an aneurysm.

Question: Having recognized the presence of a cerebral condition in the pregnancy, why did the physician use ergotrate, and why did he permit early ambulation?

CASE NO. 49

This patient (age 18; para 0; cardiac arrest) had regular prenatal care after the fourth month, and presented no abnormal findings throughout the remainder of her pregnancy. About three weeks before the expected date of her confinement, she began to have vaginal bleeding, and she went into labor. About four hours after the onset of labor, she had tetanic, painful contractions, with evidence of intrauterine bleeding.

The patient was prepared for surgery, and whole blood was started while a consultant was called. The consultant examined the patient under nitrous oxide, ether and oxygen anesthesia, and found a vertex at 1+, with 7 cm. dilatation. After catheterization, forceps were applied. The patient had an immediate cardiac arrest, before any traction was applied. Cardiac massage was instituted, and although the heart started to beat after 40 minutes, it was necessary to use massage at intervals for four hours.

Two hours after the onset of cardiac arrest, a stillborn infant was delivered by cesarean section. The placenta was completely separated, and there was about 1,000 cc. of free blood in the uterine cavity. Fifteen hours after her cardiac arrest, the patient's condition began to deteriorate, and she expired 48 hours after the onset of her labor.

This death was related to pregnancy, and it was preventable.

It was felt that this case could have been salvaged. From the protocol, it could not be understood why the staff felt it necessary to hasten labor before the dilatation of the cervix had become complete, for the patient was receiving whole blood and other supportive therapy.

After the cardiac arrest, there was no mention of rechecking the progress of the labor from below before preceeding with the section. At this point, because of the precarious condition of the patient, delivery should have been delayed as long as possible.

CASE NO. 53

This patient (age 29; para 0; anesthetic) had a normal, well-supervised pregnancy. Her labor began about the expected date of her confinement. Upon admission to the hospital, she was given nembutal grs. 1½, and three hours later she was given Demerol, 100 mg. An hour later, she was completely dilated, and was moved to the delivery

room. She was given trichloroethylene, and had four or five pains while she was awaiting the physician. As soon as he arrived, he infiltrated along the episiotomy line with five or six cubic centimeters of 2 per cent Novocain with adrenalin, making sure no blood returned into the syringe before injection. While this was being done, the patient received more trichloroethylene, and the head began to crown. The anesthetic was then reduced to the point at which the patient could answer the doctor. The patient then suddenly became cyanotic and pulseless. A live baby weighing over 4,000 Gm. was expelled. The patient was given oxygen, adrenalin directly into the heart and cardiac massage through an abdominal incision. The heart was found to be in systole.

This death was related to pregnancy, but it was not preventable.

The anesthetic used in this case (trichloroethylene) is related to chloroform, and is just as dangerous if it is not given carefully, with the patient holding the inhalator. If another person gives this anesthetic, the patient is likely to get too much. It appears that the anesthetic was pushed in this instance because the labor was progressing rapidly.

Second, one should consider the possibility of regurgitation and aspiration of vomitus.

Third, one should consider the possibility that Novocain was responsible for this patient's death.

SUICIDE
CASE NO. 99

This patient (age 22; para 0; suicide) apparently had told no one of her illegitimate pregnancy. She shot herself with a rifle, and a postmortem examination revealed a 3½-months pregnancy.

This death was related to pregnancy, and it was preventable in that it was self-inflicted. Of course it was non-preventable in that no one else had knowledge of her condition.

If there is anything that can be learned from this case, it is that unmarried mothers are certainly in need of sympathetic consultation and advice. They should be encouraged to discuss their problem with their parents so that further reassurance can come from their families. Although this was not an obstetric death, it should alert doctors to the fact that when illegitimate pregnancies come to their attention, their responsibilities extend somewhat beyond purely medical considerations. They may, indeed, have a part in preventing repetitions of such a tragedy as this.

CASE NO. 112

This patient (age 25; para 1; suicide) had had an uneventful, well supervised pregnancy and delivery. After her dismissal from the hospital, she went to stay with her parents temporarily, for facilities in her own home were inadequate. Two weeks later, she made plans with her husband by telephone to return to her home. Following this conversation, she went to the basement and hanged herself.

This death was related to pregnancy, and it was preventable. Although the patient had shown some despondency on one prenatal visit, the physician and the nurses at the hospital were not aware that she had had any emotional upset. It was subsequently discovered that the patient had had marital difficulties and that her family had been aware of her problems. If these difficulties had been described to the physician, he could have given her more support in facing them.

ABORTION
CASE NO. 37

During a period of eight months, this patient (age 25; para 0; abortion, hydatid mole followed by chorio epithelioma) had visited several doctors. At the first visit, she was about six weeks pregnant and had some vaginal bleeding. This was treated by curettage by another doctor. During the next few months, several Friedman tests were done, and all of them were reported as positive. Eight months after the first admission, she was again curetted. The pathologist's report was negative. The following month, she went to another doctor, and he performed a total hysterectomy, with bilateral salpingo oophorectomy.

Exploration of the pelvis revealed a tumor mass on the right ovarian vein and overlying the right ureter. A pathologic study revealed a mass on the uterine wall 4 cm. in diameter which penetrated the fundus to within 6 cm. of the endometrium. Microscopic diagnosis of the specimen removed showed chorio-epithelioma of the wall of the uterus extending into the pelvic veins. The patient's postoperative course was stormy from the onset, and she died a week after the operation.

This patient was unusually uncooperative, she never revealed her exact marital status, and the histories she gave to the different doctors were conflicting and full of contradictions.

This death was related to pregnancy, and it will have to be classified as preventable in that the patient did not have proper treatment following the delivery of the hydatidiform mole.

Failure to make a diagnosis in this case in somewhat excusable, since the chorio-epithelioma was in the wall of the uterus and was not delivered by curettage. Any irregular bleeding in a woman who has passed a mole is suggestive of chorio-epithelioma. Continuation of positive pregnancy tests also suggests the existing condition. Quantitative hormone determination on the urine on successive occasions would no doubt have shown an increase in titre and would have stabilized the diagnosis.

CASE NO. 42

This patient (age 26; para 0; abortion with

sepsis) had an abortion performed in about the third month of her pregnancy. She called a doctor to her home because of pain, and upon his first visit he made a diagnosis of pelvic peritonitis and sent her to the hospital. She was treated with antibiotics and whole blood, but developed a lower nephron nephrosis and died on the sixth day. An autopsy revealed septicemia and perforation of the fundus of the uterus.

This death was related to pregnancy, and it was preventable.

CASE NO. 68

Apparently, this patient (age 35; para 3; abortion with sepsis) had had a negative obstetric history. During the last two or three years, she had acquired a reputation of being psychoneurotic, and had gone to different physicians on numerous occasions. She was greatly disturbed about the onset of this pregnancy and sought an abortion.

About a week later, she called a physician, saying that she was ill but refusing hospitalization. The following day, she was admitted to the hospital, and admitted that she had taken hot high douches to produce an abortion. A pelvic examination revealed some placental tissue in the vaginal canal. She had an elevation of temperature and was given antibiotics. She developed ileus, and it was treated by stupes, Wangensteen, intravenous fluids and whole-blood transfusions. She had no vaginal bleeding or evidence of pelvic obstruction. In spite of rather extreme treatment, she made no improvement and died about two weeks after admission.

This death was related to pregnancy and it was preventable. From a medical standpoint, this case was well managed. The possibility of an undiagnosed ectopic pregnancy is unlikely, for placental tissue was found in the cervix. The patient admitted injecting something into the uterus. This substance could have gone out through the fallopian tubes, or there could have been a perforation of the uterus through which the peritoneal cavity was contaminated. Drainage through a cul-de-sac might have prevented the peritonitis from spreading.

CASE NO. 105

This patient (age 32; para not stated; abortion with sepsis) had been to her family doctor for verification of her pregnancy when it was of about 10 weeks' duration. Later she went to an abortionist, and afterwards she developed tetanus and died. An autopsy confirmed the diagnosis.

This death was related to pregnancy, and it was preventable.

CASE NO. 47

This patient (age 25; para 3; abortion with sepsis) induced an abortion in about the third month of her pregnancy, following which she passed some clots, and had some chills and fever, with jaundice. She called a physician and was admitted to a hospital.

After a complete examination, it was felt that she had no infection, but that she had an intravascular hemolysis which had caused a lower nephron disease. It was felt that this was not due to septicemia, for she was only mildly febrile, and blood cultures were negative. She was given blood transfusions, and was carefully managed as regards electrolyte and water balance. In spite of good management, she ultimately developed a hyperkalemia and died.

This death was related to pregnancy, and it was preventable. It was preventable in that the patient produced the abortion herself. It was never definitely determined what caused the hemolysis, although it was felt that infection had no influence on it. There is a possibility that the patient took or was given some medication of a poisonous nature.

CASE NO. 109

This patient (age 33; para 3; abortion without sepsis) had had a negative past history, and had had two years of nurse's training. She made two prenatal visits, and although at first she appeared to be disappointed about the pregnancy, she apparently had adjusted and accepted her condition.

She cancelled her next two appointments by telephone. A few days later, she was found in coma and was admitted to the hospital as an emergency. She expired in a matter of minutes, in spite of stimulants, oxygen and blood transfusion. It was felt that her breath smelled of turpentine, but a stomach lavage had no turpentine odor.

Autopsy revealed an undisturbed amniotic sac representing about four months' gestation. Turpentine was found in the uterine cavity, and emboli of turpentine were found in the lungs and brain.

This death was related to pregnancy, and it was preventable in that the patient had attempted to produce an abortion.

Help your central office to maintain an accurate mailing list. Send your change of address promptly to the Journal, 529 Thirty-sixth Street, Des Moines 12.

Woman's Auxiliary News

OUR PRESIDENT SAYS—

A famous educator was recently asked by the editors of the READER'S DIGEST to write an article for them on a given subject, and they offered to pay him $500 for 2,000 words. He immediately wrote back to ask them what they would pay for 1,500 words. The answer: $1,000. He then inquired what he would receive if he covered the subject in just 500 words. Promptly they replied "$2,000." Since, as I suppose, you put a somewhat similar valuation on economy, I shall be brief.

I am deeply grateful for the honor you have conferred on me, but I realize too that we officers are elected to serve and guide, rather than to direct. When you joined the Auxiliary, I sincerely believe that you intended by so doing to help both the Medical Society and your community. We officers intend to assist you by providing you with necessary information and suggestions. "A chain is only as strong as its weakest link." It is up to each of you, then, to be active in your community and to be at least as well informed about everything pertaining to Medicine as are other laymen and women.

It has been said, "If you want anything done, go to the busy person." Undoubtedly, you will feel that this is always true, since the more you do, the more you seem to be asked to do. But please remember that if a request is made of you, you will be asked to work not to please any one person, but to benefit the Auxiliary. You alone know how much you can participate. We ask only that you do all that you honestly feel you can.

Finally, may I remind you that we officers want you to feel free to call upon us for assistance. We shall always welcome any suggestions you may have that will enable us to serve you better and to improve our organization.

AMEF Note Paper and Envelopes

$1.00 for a pack of 10 each

Order from Mrs. Robert Updegraff
630 Foster Drive
Des Moines 12, Iowa

Proceeds will be donated to the American Medical Education Fund

With active cooperation from all our members, the Auxiliary to the Iowa State Medical Society cannot fail to progress and succeed. Then next year, when we meet again, we shall be able to say, "It's been a good year!"

MRS J. F. GERKEN

1957 ANNUAL MEETING

The 1957 annual meeting of the Woman's Auxiliary to the Iowa State Medical Society brought to a close another year of increased participation by Iowa doctors' wives in activities that are beneficial to organized medicine.

The pre-convention board meeting was held on Sunday afternoon. All members present gave final reports on their year's activities. Because she had missed a plane connection, we were unable to have our national president, Mrs. Robert Flanders, with us on Sunday, as had been our plan, but we nevertheless enjoyed having her with us for a short time on Monday. Because Mrs. Flanders had to leave early Monday afternoon to be in Texas the following day, many members had no chance to visit with her and to avail themselves of her gracious friendliness and vast information concerning Auxiliary activities and national health projects. En route to the South, she has written us, "It really broke my heart to have to leave your meeting so soon after arrival. . . . Rocky and I wish we could have stayed for the entire session. I am sure I am going to miss a lot. Please extend to all the members of your Auxiliary my appreciation for making me feel so much at home, and many thanks for the beautiful orchid . . . and your gracious hospitality."

Following informal round tables, the general topic for which was "Information, Please," the Annual Meeting and Conference of Delegates was opened on Monday morning by the president, and the invocation was given by the Reverend P. M. Cassidy, of St. Paul's Episcopal Church, Des Moines. Mrs. Charles Flynn led members in the Pledge of Allegiance to the Flag, and Mrs. Robert Flanders led the session in the Auxiliary Pledge. The general business session conducted at that time included the acceptance of changes in the Constitution and By-Laws, and the presentation of a state AMEF project.

The Polk County chapter had designed some note paper carrying the Auxiliary's seal and a note

about the Auxiliary's sponsorship of AMEF. The sale of this paper is to be a continuing project, with talented Auxiliary members offering a new design each year.

Following the business session, officers, chairmen, county presidents and members-at-large were introduced. All of the reports from those officers and committee chairmen are to be found in the annual report book which has been circulated to all members. Everyone is urged to read them, for it is inspiring to see how our members have met the needs of their communities and the challenge of their responsibilities.

Hostesses in the hospitality room on Monday were members of the Woodbury County Auxiliary.

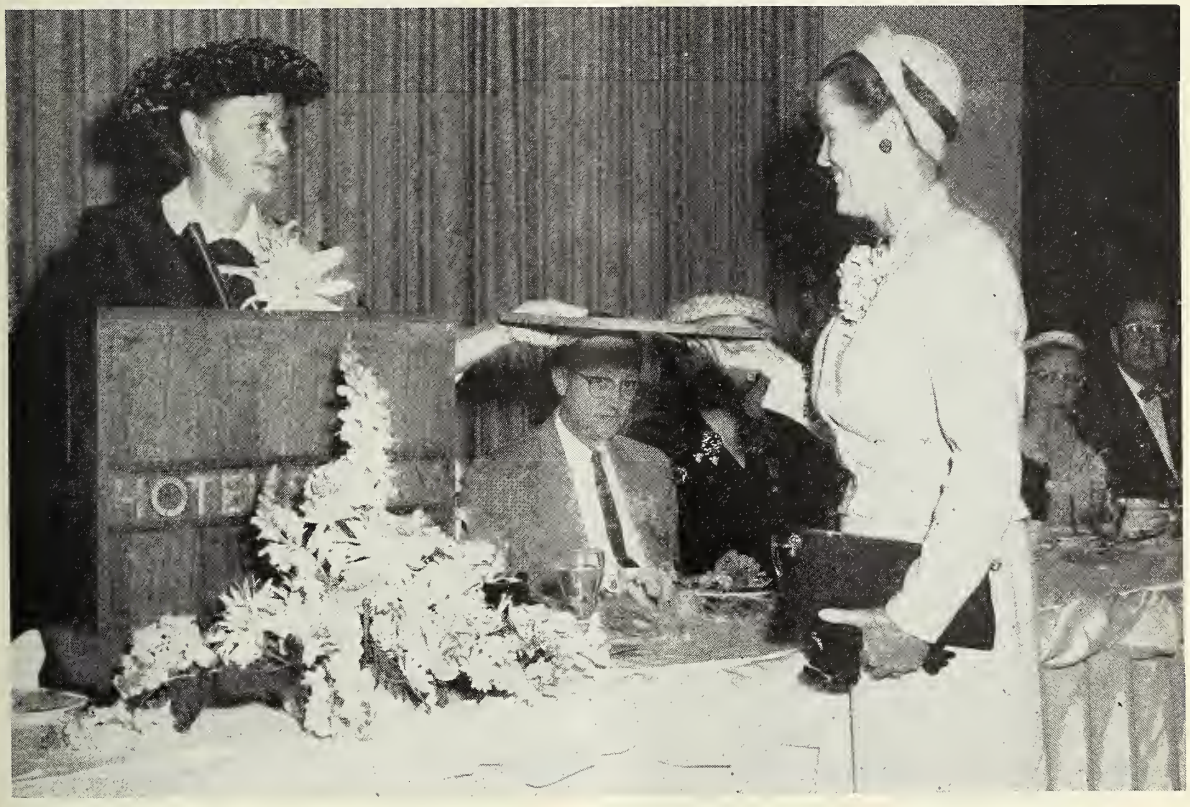
A beautiful and impressive memorial service was presented by Mrs. M. O. Larson and Mrs R. A. Culbertson, with a background of organ music played by Mrs. E. A. Vorisek.

Dr. Herbert Merillat spoke at our morning session on mental health problems and legislation, and on the use of "Milestones to Marriage."

Guests and speakers at the noon luncheon were Mrs. Flanders, Mr. Russell Brown, director of safety education in the Iowa State Department of Public Safety, 15 past-presidents of the State Auxiliary and Mrs. J. C. Decker, of Chicago. Mrs. Everett M. George presented the Junior League Choir, and its director, Mrs. O. D. McKasson, explaining that the members have had no particular training, but love to sing. The group sang five very fine selections, in which there were several noteworthy solo parts, and your new president, Mrs. Gerken, was so impressed that she is thinking seriously of asking the Auxiliary to form a similar chorus. Mrs. Flanders, in her address, touched on our progress and our goals for tomorrow.

Mrs. Charles Flynn distributed the county presidents' handbooks, the fruit of a year of research and hard work on the part of both Mrs. Hazel Lammey and Mrs. Flynn. A tour of Salisbury House was next on the program. Salisbury House, in Des Moines, is a replica of the famous London structure of the same name. It is in part a museum and in part a headquarters office building for the Iowa Education Association, the statewide organization of public school teachers. Evidence of the worthwhileness of the trip was to be found in the remark, voiced by several members, "To think that I almost didn't come!" Mrs. Charles Flynn and Mrs. Lester Hegg presided at the tea table there.

Time keepers for the session were Mrs. J. L. Kestel, of Waterloo, and Mrs. R. F. Nielsen, of Cedar Falls. The Election Committee members were Mrs. Leo Pearlman, chairman; Mrs. William Chase, Jr.; and Mrs. Chester L. Putnam. The page was Mrs. F. E. Thornton.



Mrs. Read Arthur, of Clarinda, received the President's Award for her service as a Gray Lady and for her leadership in organizing a Gray Man program at the Mental Health Institute in her home town. Mrs. Dean H. King is shown making the presentation.

The Benefit Dance held on Monday night was such a success that the suggestion has been made that it be held in a larger place next year. To the Standard Medical & Surgical Company of Des Moines goes part of the credit, for the social hour and refreshments that it provided before the dance were the honey attracting the dancing bees. The profit from the dance was $320, and we shall gratefully add it to the Nurses Loan Fund.

The hostesses for Tuesday morning in the Hospitality Room were members of the Wapello County Auxiliary. The pages were Mrs. E. R. Posner and Mrs. R. E. Paul, and the timekeeper was Mrs. R. F. Nielsen. The second business session began with final reports from all members who had not responded on Monday, and afterwards came the election of officers and of delegates to the national convention.

Dr. Francis C. Coleman, chairman of the ISMS Committee on Legislation, spoke to the morning session on current legislative problems.

Mrs. Howard Smith presided at the President's Luncheon on Tuesday noon. Mrs. Julian Bruner presented the invocation, and Mrs. Elmer Vorisek acted as Mrs. Bruner's accompanist and provided the luncheon music. Your president had the privilege of presenting the President's Award to Mrs. Read Arthur, of Clarinda, in recognition of her service to the state of Iowa in the field of mental health. Her loyal and devoted service as a Gray Lady and her organization of a Gray Man program at the Mental Health Institute in Clarinda have helped mental patients in their efforts to return to reality.

The guest speaker was Dr. Ernest B. Howard, assistant secretary of the AMA. Other guests were Mrs. W. L. Downing, Dr. and Mrs. Howard Smith, Dr. E. F. Van Epps, Dr. and Mrs. F. C. Coleman, Dr. and Mrs. Fred Gerken, Dr. and Mrs. Dean King, Mrs. Leo Pearlman, whose name had been drawn from the registration on Tuesday, Mrs. Donald Taylor, Mrs. Hazel Lammey, Mrs. E. J. Osen, Mrs. Dan Danes, Mrs. B. B. Berry, Miss Elizabeth Busch, Mrs. W. H. Sherin, Mrs. E. W. Kingery, Miss Geraldine Busse, Mrs. Robert Throckmorton, Mrs. Edwin Lyle and Mrs. Beulah Hefner.

A psychologic vignette was presented by a cast of Polk County doctors known as the "Scabby Players." One doctor spent the entire luncheon hour looking for "Mrs. Miltown Pettibone," and when he found her he presented her with a plant that had grown rapidly all during luncheon to the size of a junior tree.

Mrs. Herbert Kahler presented the achievement awards to the county Auxiliaries that were judged to have excelled in their respective divisions in work done throughout the year. The winners were Dubuque, Wapello and Clay. Mrs. Samuel Leinbach presented the awards for exhibits. All of the entires had been displayed at the Auditorium, and the judging had been done by the ISMS Woman's Auxiliary Advisory Committee, consisting of Drs. Fred Sternagel, George Scanlon and E. P. Van Epps. The winners, in their respective divisions, were Polk, Dubuque and Mahaska.

Mrs. Lester Hegg presented the courtesy resolutions. The new officers were beautifully installed by Mrs. Howard Smith and were given a booklet printed in 1948 and used by the president, Mrs. Fred Moore. Included in this booklet is the eulogy "The Doctor's Wife," by Dr. Rock Sleyster.

Mrs. Gerken then received the gavel from the outgoing president and delivered her inaugural address. Mrs. Charles Flynn presented the past-president's pin.

The business of the day having been concluded, a small-fur fashion show was presented by Kneeter Furs, of Des Moines. Some of the attractive members of the Polk County Auxiliary served as models. It was announced, subsequently, that Mr. Harry N. Kneeter had donated $50 to the Woman's Auxiliary's Nurses Loan Fund.

Following the style show, there was a coffee at the Veterans Auditorium, presented by the A. S. Aloe Company, so that all members of the Auxiliary might be sure to see the exhibits that were displayed there. The coffee table featured an attractive Civil Defense centerpiece, and it was presided over by Mrs. E. B. Hoeven and Mrs. R. F. Nielsen, with relief furnished by the Polk County Auxiliary. The exhibits were not numerous, but they were beautifully done and showed much time and work. I wished that I might take all of them to the national convention.

A post-convention board meeting was held after the annual meeting, with the new president, Mrs. Fred Gerken, presiding.

Now, if I may, I should like to add some personal notes. Only those members who have worked on the preparation of a three-day annual meeting of the size that our Auxiliary stages each year can truly appreciate the time and work that went into this one. It was very well planned and was lovely. I wish to extend my sincere appreciation to Mrs. Ralph Hines and the entire membership of her committee, to Mrs. Dwight Wirtz, president of the Polk County Auxiliary, and to Mrs. Hazel Lammey for their untiring efforts to give us a very wonderful three days to close another successful year. Also, I wish to extend my sincere thanks to all Auxiliary members and to the doctors who so willingly gave of their time during our meetings.

The suggestion box opened at the post-convention board meeting held some very fine suggestions for a better and more simplified annual meeting. You may be sure that the officers appreciated all of them and will use as many of them as they can.

I shall wear the past-president's pin with pride and humility. It shall be a constant reminder to me of your many kindnesses and of your friendship. I am glad that I put the Auxiliary at the top

of my agenda, and it shall remain there always. For this year of learning and for the honor of serving as your president, I thank you.

Mrs. Dean H. King
Immediate Past-President

1958 NOMINATING COMMITTEE

DELEGATES

Board members:
Mrs. Dean H. King, Chairman
Mrs. Elmer A. Larsen
Members from the voting body:
Mrs. Dwight Wirtz
Mrs. R. F. Nielsen
Mrs. K. M. Chapler

ALTERNATES

Board member:
Mrs. Howard Smith
Members from the voting body:
Mrs. M. O. Larson
Mrs. William Castles
Mrs. M. L. Scheffel

THANKS

The Woman's Auxiliary to the Iowa State Medical Society wishes to thank Standard Medical and Surgical Company, of Des Moines, Kneeter Furs, of Des Moines, and A. S. Aloe Company, of St. Louis, for helping to make its 1957 annual meeting a success.

EXHIBITS

The county Auxiliary exhibits at the annual meeting were varied in type this year. Mahaska County's prize-winning entry (Class I) was the Viewmaster type of thing, in which the story of the year's projects unrolls before the observer. It was an original idea and well executed. Grundy County's poster (second prize, Class I) featured work done with a group of mentally retarded children in which the members of that Auxiliary were interested. Dubuque County's winning exhibit (Class II) was a very clever adaptation of the Revlon isolation booth, with the slogan "We Revelon Our Success." Polk County's exhibit this year (prizewinner in Class III) was of the table-top type. A collection of miniature dolls—original creations made and dressed by Auxiliary members—were posed in clever attitudes illustrating some of the chapter's projects such as benefit bridge parties, handicapped craft sales, etc. The Wright County entry (Class I) was of the poster type, featuring that Auxiliary's two outstanding projects, TODAY'S HEALTH and Nurses Loan Fund. For the first time the exhibits were displayed in the Veterans Auditorium in our Woman's Auxiliary display area. More space was available there than had been at our disposal at the Savery Hotel, and undoubtedly more doctors were able to see the exhibits there.

Since so few exhibits were entered this year and last, it was thought wise to decide whether it is worthwhile to continue this phase of our work. It was voted to continue the exhibits next year, but not to have them judged. Hence, no prizes will be awarded. Perhaps this new arrangement may be a means of encouraging the submission of more exhibits, for some of us who feel that we lack sufficient artistic talent to enter competitions may be willing to prepare exhibits if there is to be no judging. The idea of bringing samples of projects to the convention does have merit, and if more exhibits are brought next year, the interest attaching to this feature of our program will be considerably enhanced.

Mrs. S. P. Leinbach
Exhibits Chairman

IOWA COUNCIL FOR BETTER EDUCATION

Mrs. E. Vorisek and Mrs. W. B. Chase, Jr. attended the April 9 meeting of the Iowa Council for Better Education as representatives of the Auxiliary. The subject for discussion was "The Exceptional Child."

Mrs. Betty Jenkins, of Cedar Rapids, spoke on "The Mentally Advanced Child." She believes that gifted children have been the most neglected ones in our classrooms. These youngsters include not only those with high I.Q.'s, but the specially talented ones as well. Attempts are now being made to encourage attention for these children. The main essential is to discover their special interests and to develop them.

Mrs. Ruby Van Meter, of Des Moines, spoke on "The Handicapped Child," telling of the visiting-teacher program and of the special classes for children with special disabilities. Dr. Miles Zintz, of Iowa State Teachers College, Cedar Falls, spoke on "What Is Being Done for the Retarded Child." He believes that equality of opportunity for education is a fundamental right of all children. Retarded children fall into three classes: slow learners, educables and trainables. The first can be handled in regular schools, provided that the teachers and parents are patient and understanding. The second need special classes where they may be taught to be socially acceptable and economically independent. The third need day schools where they can learn some speech development, simple personal living habits and the habit of completing the little tasks of which they are capable.

The ultimate goal for teachers is the use of all of every child's potentialities. To achieve that objective, they must recognize the limits of the potentialities in each individual.

THE CHATTER BOX

The state convention was lots of fun this year!! We couldn't help noticing the lovely hats!

* * *

Alice Olson, of Northwood, looked charming wearing a stunning orange straw-brimmed hat trimmed with organdy flowers.

* * *

Then we admired **Lillian Nielsen**'s smart natural straw with shades of blue veiling surrounding the hat.

* * *

Sue Gerken, our new state president, wore a darling small pink straw trimmed with matching wispy tulle.

* * *

So many people have asked, "Who was **Mrs. Miltown Pettibone?**" If Janet will forgive us, we'll let the secret pop out—The glamorous Mrs. Pettibone was none other than **Mrs. Sam Zoeckler,** of Des Moines.

DR. COLEMAN'S REPORT OF HEALTH LEGISLATION

Dr. Francis C. Coleman told the annual meeting of the Woman's Auxiliary to the Iowa State Medical Society that the AMA is revising its legislative approach. It has found, he reported, that the bulk of lobbying must be done at the local level if results are to be obtained. Lobbyists working directly with elected officials have been found to have no more than limited influence. Thus, legislative contact men and women in each medical society and Auxiliary are to work in close cooperation with the AMA. Dr. Coleman is chairman of the ISMS Committee on Legislation.

State legislation during the recently completed session of the General Assembly, Dr. Coleman said, has included the enactment into law of the Joint Agreement which was entered into several months ago by the ISMS and the Iowa Hospital Association, and a law permitting the licensing of foreigners who have graduated from medical schools that are on an AMA-approved list and who have worked as internes in American hospitals for three years and have passed the required examinations. The latter law also gives the State Board of Medical Examiners the right to revoke licenses, as well as to award them, subject to judicial review.

The President of the United States, Dr. Coleman said, had urged no health measures in the Congress this year, perhaps because of the widespread pressure for federal economies. Yet the budget, as presented, includes a 25 per cent increase in funds asked for the Department of Health, Education and Welfare. Dr. Coleman characterized the Secretary, Mr. Folsom, as a conservative.

A trend that he predicted will cause legislative problems for years to come is the feeling that health care should be the responsibility of someone other than the individual. At present there is the tendency to saddle employers with the costs of caring for their employees and their families; in the future we may expect a resumption of pressure for federal health insurance.

COUNTY AUXILIARIES

Delaware

The members of the Auxiliary to the Delaware County Medical Society were hostesses at a tea, on March 30 at the Memorial Hospital, honoring the junior and senior girls in the high schools of the county. The guest speaker, Mrs. Marian Herring, assistant director of nursing at Finley Hospital, Dubuque, gave the girls a glimpse of life in a hospital and a summary of the qualifications one must have for a nursing career. Twenty-four girls from Manchester, Hopkinton, Ryan, Strawberry Point and Dundee were served.

Mahaska

At the regular meeting of the Mahaska County Medical Auxiliary, held at the Downing Hotel in Oskaloosa on April 9, final plans were made for the exhibit to be shown at the state convention, and Mrs. Hazel Hemphill was selected as the chapter's nominee for the Community Auxiliary Award for participation in community betterment.

The Future Nurses Club held a tea on April 15 at the high school in honor of the sophomore class.

Wapello

The Auxiliary to the Wapello County Medical Society met at the home of Mrs. R. A. Hastings on April 2. Mrs. D. G. Emanuel and Mrs. R. D. Dalager assisted with the entertainment. Seventeen members were present. Committees were appointed for the Career Day Tea to be held in May.

WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

President—Mrs. J. F. Gerken, Waterloo
President-Elect—Mrs. H. C. Merillat, 2800 Woodland Avenue, Des Moines 12
Secretary—Mrs. Wm. C. Shinkle, 907-49th St., Des Moines
Treasurer—Mrs. E. A. Vorisek, 6205 Woodland Rd., Des Moines 12
Editor of THE NEWS—Mrs. E. T. Burke, 601 S.W. 42nd Street, Des Moines 12
Asst. Editor of THE NEWS—Mrs. D. F. Crowley, Jr., 663 44th Street, Des Moines 12

National Issues Confronting Medicine

ERNEST B. HOWARD, M.D.

CHICAGO, ILLINOIS

LET US TAKE A BRIEF look at some of the national forces which are likely, over the next few years, to affect our right to practice free medicine. Prognosis, I would remind you, is just as difficult in socio-economic areas as it is in the practice of medicine, and we can do little more than guess.

THE ATMOSPHERE IN WASHINGTON

Obviously, one of the most important factors that will affect the practice of medicine and public welfare is the national situation in Washington—in the Congress. Now what, briefly, is the general picture in Washington today? It seems that we are moving sideways, for very little definitive health legislation is being adopted. Characteristically, our senators and representatives introduced a flood of bills this year which were designed to have an impact upon physicians, but as yet very few of them have been considered or adopted. The Eisenhower Administration, whatever it may or may not be doing in other areas, has been reasonably good to Medicine up to this point. In the previous two sessions of Congress, most of the Eisenhower health program was adopted. In this session, the Administration has promoted only two important bills. One of them has our support, and the other is of no particular concern to us.

The bill that we support would provide a one-time grant of federal funds for the renovation and reconstruction of physical plants at medical schools. On several occasions, the AMA has officially indicated its support of this Hill-Burton type of federal assistance to medical education. The Administration introduced that bill, and it will push it, I am sure, with full force.

The other bill in which the Administration is interested would provide for a pooling of funds by the health insurance industry in order to permit that industry to sell contracts covering substandard or poor risks.

Congress, at the present time, is preoccupied with economy, and as a result all bills necessitating expenditure of public funds are receiving relatively little attention. We are well enough satisfied with that turn of events, for as citizens we must conclude that any successful effort to reduce government spending can do nothing other than benefit us. If it is a success, it will in addition prevent the federal government from initiating various health projects that might affect both the public and the physician adversely.

Dr. Howard is assistant secretary of the American Medical Association.

This year, significantly, the President did not send a special health message to Congress. From our point of view, that was a very favorable sign. Instead, the Administration is emphasizing its program for aid to public schools, and though as citizens we doctors are interested in that proposal, the AMA has taken no stand regarding it.

SOCIAL SECURITY ISSUES

Now, let us turn our attention to a few specific bills that are of particular interest to us. After a bitter struggle in the last session of Congress, the AMA lost its fight to prevent the adoption of a new disability program whereby OASI beneficiaries judged to be permanently disabled, physically or mentally, were made eligible to receive cash benefits from the government at the age of 50 years. The amounts are to be equivalent to those that they would otherwise have begun to receive at the age of 65.

We, along with many other national organizations, opposed this legislation because we feared, quite properly, that the introduction by the federal government of a cash benefit for the disabled under the Social Security System would inevitably be followed by attempts to liberalize the amounts or to reduce the age at which the disabled would be eligible for them. Eventually, we think, the federal government will concern itself with the medical care of these disabled OASI recipients in an effort to rehabilitate them, and will then be on the way toward domination of medical care generally.

Already bills have been introduced to eliminate or to reduce the age limit, and other bills have been introduced to weaken the stringent eligibility requirements that the Social Security Administration set up for the implementation of the law.

The greatest legislative danger at the national level—a danger next year, rather than during this one—is the move that is on foot to provide federally paid hospitalization for Social Security beneficiaries, especially those over 65 years of age. "Free" hospital benefits for Social Security recipients would represent a foot-in-the-door for the forces that would like the federal government to provide "free" medical care. That move will receive tremendous support from labor unions and from other groups that are interested in promoting the welfare state.

Social Security coverage for physicians is an increasingly controversial issue in American Medicine. There is no pressure of which I am aware in

this Congress for compulsory coverage of physicians, and there certainly is none from the Administration. I might also say that there is no probability, in my opinion, of a bill providing for voluntary Social Security coverage for doctors.

THE KEOGH-JENKINS BILL

Another proposal that is of immediate concern to doctors is the Keogh-Jenkins Bill. If adopted, it will permit physicians and 10,000,000 other self-employed persons to set aside as much as $5,000 per year or 10 per cent of taxable income, whichever is lesser, up to a maximum of $100,000 in a lifetime, as an individual retirement pension fund, either through a bank, a trustee or an insurance company, with the privilege of tax deferment. Under the provisions of the bill, the individual would pay income tax on the money as he withdrew it after retirement at the age of 65.

This is an effort to extend to the self-employed of the nation the same privileges that approximately 23,000,000 employees now enjoy. That is to say, the contributions that employers make to employee pension funds are tax exempt, and the savings that the self-employed make for their own retirement should be treated similarly.

So far as we are concerned, this bill is the hottest issue now before Congress. The AMA, along with many other organizations in which there are self-employed members, is doing its best to secure its passage. It has a chance, but I should judge that the prognosis is no better than about 50-50. Without getting into the technical details, I can point out that the efforts of some employee groups to get the bill changed for their own benefit are endangering its chances. They seek tax exemption for employees' as well as employers' contributions to employee pension funds, a change that would obviously involve a considerably larger loss of revenue to the government, and in addition there is a move to provide tax exemption for Social Security contributors, and they include about 70,000,000 people.

Obviously, these additional and simultaneous moves to get tax exemption or tax deferment for contributors to various employee pension arrangements are creating a serious legislative problem for us. Thus, although we should do everything possible to bring about the passage of the Keogh-Jenkins concept, it will not be easy.

FEDERAL MONEY FOR MEDICAL RESEARCH

Research is another important and burdensome federal program. It is a national issue that, frankly, is of great interest to American Medicine.

Congress is bewitched by the word *research!* It not only endorses and approves every appropriation requested by the Department of Health, Education and Welfare for research in medicine, but it goes much farther. During the past year, Secretary Folsom actually had to return several millions of dollars to the federal treasury because, as he told Congress, he saw no way to use the money in a constructive way. I mention that because it is extraordinary for the secretary of any department to insist upon returning funds to the United States Treasury.

American physicians have become particularly interested in the federal research program in cardiovascular diseases. For five years, $575,000 per year—the largest research grant ever made by the HEW Department—was made available to the American Hospital Association. The AMA naturally became quite disturbed over this matter, and after a series of conferences between the trustees of the AMA and the AHA it has been agreed that the board that will control expenditures from the grant will be selected by the AMA.

Many strange things are going on in this field of research. Of most interest to us is that the American Hospital Association is receiving enormous sums of money not only in the field of Hill-Burton development—for hospital design, etc.—but also in the field of purely medical investigation. That, naturally, is disturbing. It raises the question of whether or not the AMA should ask the government for federal funds to expand its own research program. There are those who feel very strongly that the time has come for the AMA to reverse its long-standing basic policy of paying for its own research.

Then, there are those on the other side who feel that the AMA, as a bastion of conservative thought, should not ask the federal government for money. Rather, they say, let us go to our membership and, if necessary, ask for an increase in dues in order to carry out the research that we ought to be conducting in any event.

It is true that right now we are in the process of accepting a project for which the federal government will put up $150,000. On behalf of the Civil Defense Administration, we are to conduct research to determine medical strategy in case of an H-bomb attack on this country. I submit, and I think you will agree with me, that this particular action of the AMA in accepting funds from the government ought not to be regarded as having set a precedent. In this instance the government, through the FCDA, came to the AMA and requested it to undertake this project for the purposes of national security.

MEDICINE AND LABOR

One of the serious national issues confronting Medicine concerns Labor, and we may as well face it. Although Labor is undergoing a transition as regards its attitude toward health care, and its position is not clear nationally, the record shows that it has consistently supported various bills that would completely socialize the practice of medicine. Labor has been the prime force behind bills for compulsory health insurance.

We must, therefore, do everything in our power —especially at the local level—to get labor leaders to agree with us about what is best for the public in the field of medicine. I feel certain that there are many labor leaders of high prestige in their movement who, if they could be shown what the physician-patient relationship is and how a physician can bring good medicine to the people, might —and I say *might*—be willing to change their opinions. Over the long run, and with a great deal of work both nationally and locally, I think we have a chance to change the official attitude of the A.F.L.-C.I.O., but we must work on it and work on it hard!

Another issue concerns the health program of the United Mine Workers. I don't believe that this question is particularly disturbing to you in Iowa, but in many other states where the United Mine Workers have established a union-controlled-and-sponsored medical program, physicians have become very much aroused. It is a hot issue.

At the beginning, the United Mine Workers sponsored a program whereby union members had free choice of physicians. The physician was paid on a fee-for-service basis, and there were no fee schedules. The physician's charge was his usual fee, and if he charged an amount that appeared to be too high, the regional liaison committee of the United Mine Workers discussed the matter with the doctor's medical society. Gradually, however, the situation was changed. The United Mine Workers decided that it had to build its own hospitals—a series of 10 of them—and it began to bring in full-time physicians and paid them salaries to staff those hospitals. The union then decided that the worker's right to choose his physician freely and voluntarily should be restricted. So the United Mine Workers—or so say the doctors who are most disturbed about it—now have a completely paternalistic, monopolistic program which is destroying the right of the individual union member to select his own physician.

MEDICARE

Now, a word about the Medicare program for providing medical attention to the dependents of service men. The AMA took a neutral position on this legislation, and I believe that its decision was a wise one. In essence, we said that if Congress were to provide this medical care as a right, then at least it should do so through private physicians and private resources, and not through expanded government facilities and government physicians.

So the program went through, and we now have a military dependents' medical care program serving approximately 1,000,000 individuals who had not previously received medical care at the expense of the government. The program is on a full-service basis, for that was the interpretation of the Defense Department when its representatives negotiated with the AMA. Allowances were established in negotiations between medical societies and the government; physicians are being paid by fiscal agents—usually Blue Shield and sometimes the medical societies themselves.

The extent of the Medicare program is directly dependent upon the size of the armed forces, and there is, therefore, an internal containment factor. If the armed forces become very large, then this arrangement will encompass a great many more individuals than it does today. But if, on the other hand, the armed forces shrink, as now seems the more likely alternative, then the number of dependents receiving federalized medical care—and obviously that is what it is—will become smaller. Even though the federal government has entered into contracts and is permitting private physicians to provide the care, doctors are being paid directly by the federal government through fiscal agents. Therefore, the program carries clear-cut, inherent dangers to the freedom of American Medicine.

The Defense Department recognized that fact just as we do. The important question is whether or not this type of government-sponsored medicine is to be extended to civil service employees and other such groups. If, as now appears likely, some kind of health-insurance package—either Blue Cross and Blue Shield or commercial insurance or a combination of both—is purchased by the federal government for its civilian employees and their dependents, then it seems obvious that there will be no impact upon the shape of medical practice. But if, as some important people are now urging, the Medicare principle is extended so as to provide medical care for these 2,500,000 additional people, then the situation will have become extremely dangerous!

I should expect American Medicine to oppose the extension of the Medicare principle to this body of American citizens, because no patriotic obligation can be put upon doctors so far as they are concerned. The services that they are rendering to the nation involve no special risk or sacrifice. Yet there is a remote possibility that once having consented to the Medicare arrangement for the dependents of servicemen, physicians will be asked to enter into agreements for the care of other groups on the same basis. Any broadening of that coverage would have a serious impact upon all of us.

COOPERATION WITH OTHER ORGANIZATIONS

One cannot discuss the national issues confronting American Medicine without mentioning the other great national organizations with which the AMA must work both for the welfare of the American people and for the self-interest of physicians, for example the National Association of Manufacturers, the United States Chamber of Commerce, and the American Farm Bureau. I could name many other such groups, perhaps 50 of them, all conservatively oriented and all striving to pro-

tect the freedom of the consumer to choose what he wants to do with his money.

When we speak of "free choice of physician," we are, in the final analysis, speaking of the prime concept of American capitalism. We are expressing the prime anti-socialist idea—an idea that is not just medical. That concept is paramount in the thinking of the members of all of those organizations. Thus I should like to close by recommending that here in Iowa you should establish the closest possible liaison with those groups, both at the local and at the state level. You will learn a great deal from them about their problems, and they will learn from you.

Conservative though many businessmen are, they need to learn much more than they now know about the physician-patient relationship and about the services that the doctor provides.

We have long been the targets for a continuous barrage of anti-medical propaganda, with the result that many people have been given the idea that whenever doctors are organized into societies, they act only from a selfish-interest or obstructive point of view. Obviously, we act in the public interest, but we must always translate what we do into words that are positive, rather than negative. We must make it clear that we are *for* something, rather than just against its opposite. And we have a job to do in informing our natural friends, the memberships of organizations that are based, as ours is, on private enterprise and individual freedom. Together, we can operate as a powerful force.

Parents of Hospitalized Children Need Attention

Hospitalization of a child is as hard on the youngster's parents as it is on him, three California investigators have concluded. In fact, they think that the personal interest and incidental attentions that physicians and nurses give him are as important, in the parents' minds, as are his medical care and treatment.

In a report on the reactions of 100 parents whose children had been hospitalized,* Dr. Helen Gofman, Miss Wilma Buckman (a medical social worker) and Dr. George H. Schade, of the University of California Medical Center, San Francisco, said that every individual interviewed had confessed anxiety over his or her separation from the child. Fifty-seven of them said that their anxiety was "overwhelming," and that they "had such difficulty in coping with their own fears . . . that they were unable to give support to their child." They dreaded leaving the youngster, and feared that understanding care would not be given him.

However, when 68 parents were interviewed on their children's discharge, 44 of them felt better about the hospitalization than they had at the time of the child's admission, mainly as a result of the "friendly personal handling" of the youngster by the medical and nursing staff. Of the 24 parents whose attitude had not changed, 18 commented on the importance that they attached to their child's personal care by the nurses and doctors.

One comment was: "We were relieved when we visited him to see him happy and content, though of course he wanted to go home. We noticed how the other children felt about the nurse, how they seemed at home and content. You can learn much by a child's reaction; they're honest about how they've been treated. The nurses were kind, like mothers would be to children."

The authors pointed out that it is necessary for the physician to explain as fully as possible to the parents about why the child is being hospitalized; what procedures and treatment will be necessary; what risk and discomforts will be involved; and what to expect in the way of hospital facilities and routine. The topics last mentioned include admission procedures, visiting hours, whether the child will be with other children, whether he will be permitted to walk around, what toys or other possessions he may bring to the hospital, whether a school teacher will be available there, and the availability of toys, television and other facilities to help occupy and distract him.

Inadequate preparation of the parents, the investigators found, was reflected in the children's slowness to understand and accept the hospital situation. Seventy-six of the 100 parents had received less advance briefing then they would have liked, and 53 of them had not even told their children that they were being taken to a hospital.

The authors also noted that the preparation must be continued throughout the hospitalization. Each new procedure must be explained. Some parents felt their greatest anxiety when they went to visit their children and discovered something new about them. For example, in one reported instance, a child's head had been shaved unbeknownst to the parents.

Anxiety also can be reduced, the authors said, by changes in admissions procedures so as to allow for a more gradual separation of the parents from their child and by the extension of visiting hours.

*Gofman, H., Buckman, W., and Schade, G. H.: Parents' emotional response to child's hospitalization. AMA J. Dis. Child., 93:629-637, (June) 1957.

Scientific Articles

Staphylococcal Infections

IAN MACLEAN SMITH, M.D.

IOWA CITY

STAPHYLOCOCCAL INFECTIONS have always been common and complicated, but their relative insensitivity to antibiotic agents has given them added prominence in recent years. They spare no age group, and in consequence they make up a fair proportion of the day-to-day practice both of general practitioners and of many specialists (Figure 1).

THE DISCOVERY AND HISTORY OF STAPHYLOCOCCAL INFECTIONS

The pus-forming diseases were for many years treated by surgeons, and it was such a man, a Scot named Ogston, who gave the Staphylococci their picturesque name (meaning "a bunch of grapes") and made the first significant contribution to our knowledge of them.[3] Pasteur and Koch were at the height of their investigative careers, and Koch, after a study of sepsis in animals, had pointed out the need for a similar study in man.

Ogston did a great deal of thinking about sepsis as a result of Lister's discovery of the antiseptic method of treating wounds. He obtained a small grant from the British Medical Association and set up a laboratory in his garden. There, he studied pus from 65 acute abscesses and from 16 cold abscesses that he had seen in the course of his busy practice. Using the best stains and microscope available, and utilizing considerable skill, he made counts of the cells in the pus and examined stained preparations. He injected the pus into eggs in order to obtain pure cultures—a difficult task at that time—and then injected it into mice and guinea pigs. In those animals, abscesses formed, and he was able to prove that the responsible microorganisms were alive by showing that their number greatly increased with the passage of time. He also noted that certain specimens of pus clotted (cf. the coagulase test of today), making counts impossible.

Ogston's results were quickly acclaimed in Germany by Virchow and others, but he received very little recognition in his homeland, and now his importance in this connection has been forgotten. His name lives in the field of surgery in such eponyms as "Ogston's operation," "the Ogston-Luc operation" and "Ogston's line," but Bergey's Manual, the reference book on bacteriology, does not mention him.

BACTERIOLOGY[10]

Staphylococci grow very easily on the simplest of media. Two per cent agar enriched with meat broth is convenient. They are divided into three types according to the pigments they produce. When the pigment is yellow, they are called "citreus"; when golden, they are called "aureus"; and

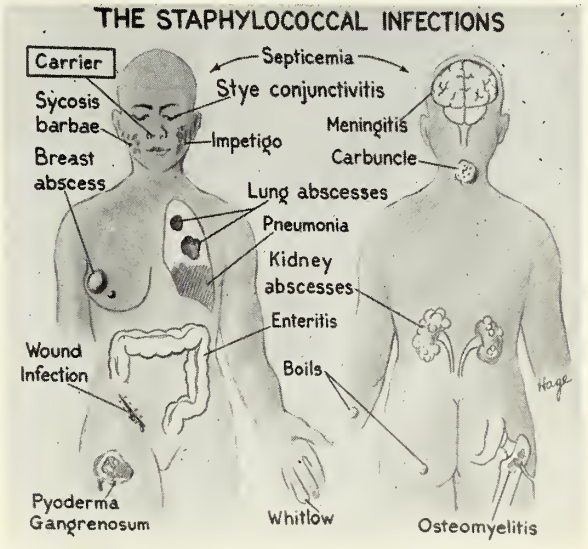


Figure 1. A summary of staphylococcal infections.

Dr. Smith received his medical education in Scotland and is an assistant professor of internal medicine at SUI. His paper reports research at the SUI Infectious Disease Laboratory, which is supported by the Department of Medicine Trust Fund, by the U.S.P.H.S. and by the Iowa Trudeau Society.

when white, they are called "albus." The aureus variety are the main offenders in human disease. Ogston noted that they grow in grape-like clusters, in contradistinction to the Streptococci, which grow in chains. Staphylococci are gram positive—i.e., when an attempt is made to decolorize them with alcohol or acetone, they hold on to the purple dye which has been mordanted onto them with iodine. The fermentation of sugars is not important in the study of Staphylococci, but most of the disease-producers ferment mannitol.

Staphylococci have been divided into three different types by agglutinating antisera, and these groups correspond roughly with three main bacteriophage groups. In phage typing, a plate is uniformly covered with a four-hour growth of the unknown Staphylococcus, and then drops containing each of the 27 known phages are placed on it in order. This preparation is then incubated overnight at 30° C. If phages 3A and 3C eat holes in the sea of staphylococcal colonies, then the Staphylococcus being tested is identical with any other that is eaten up by the same phages (Figure 2). This, as will be seen later, has been very helpful in the study of staphylococcal epidemiology.

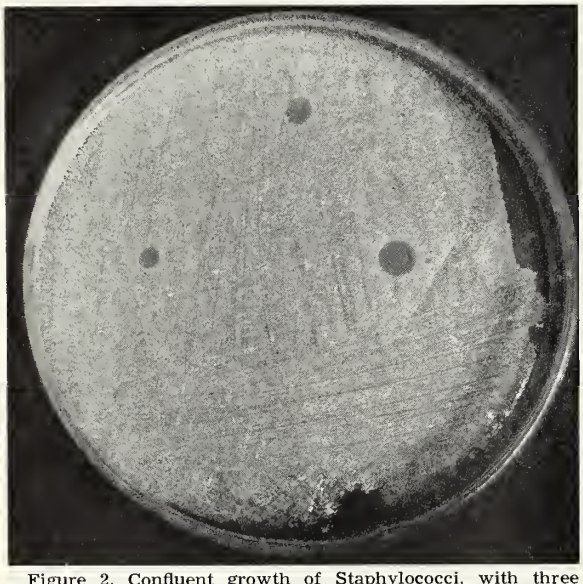


Figure 2. Confluent growth of Staphylococci, with three areas of lysis due to added phage specific for this strain of Staphylococcus.

Toxins are produced by the Staphylococcus. They will lyse red cells, destroy white cells, destroy rabbit skin and cause a fatal toxemia in certain animals. This latter toxin is important in the relatively few deaths that occur early in the course of a staphylococcal infection. Another toxin is the well known food poison which causes vomiting when it has been injected intraperitoneally into kittens.

When mixed with oxalated or citrated plasma, many cultures of Staphylococci will cause clot formation in three to six hours. The presence of the responsible enzyme, coagulase, is a good indication of pathogenicity. It is hard to believe that this enzyme is a direct *cause* of the pathogenicity. Pathogenic Staphylococci have been shown to produce more toxins than do non-pathogenic ones. The production of cogulase is probably only an expression of the great biochemical activity of the virulent organism. The fact that Staphylococci readily adapt themselves to many conditions not only makes them ubiquitous but also sometimes causes them to change their characteristics *in vitro*. Fortunately, however, the phage type is relatively stable.

For practical purposes, it may be said that the hemolytic coagulase-positive Staphylococci are the dangerous ones. At SUI, we are working on a new test in mice in an attempt to increase our accuracy in assessing the virulence of a Staphylococcus isolated from a lesion in a patient.

THE EXPERIMENTAL DISEASE IN MICE

For many years, Staphylococci were studied in rabbits. Many interesting studies were made, but for the most part they were conducted in single animals, for the rabbits are both expensive and difficult to house. Now, it is more convenient and accurate to study the disease in mice. Dr. René J. Dubos and I[4, 6] have shown that intravenously injected Staphylococci are initially plentiful in all the organs of the body. The organisms are in the blood for 24 to 48 hours, but afterwards can rarely be found there. This is an important observation, for it points out that the continual seeding of organisms into the blood is necessary for the maintenance of a septicemia. This of course is important in staphylococcal septicemia in human beings. Within an hour after injection, there is a rapid fall in the number of bacteria in different organs, a fact that can be demonstrated by grinding the organs and plating 10-fold dilutions of the resultant homogenate (Figure 3). In the spleen and liver, thereafter, the fall is less rapid, but by the end of two weeks the vast majority of the organisms have disappeared. In the lung, the organisms are not too plentiful after one hour, but they persist without much change over a two-week period. In the kidney, a somewhat different set of events takes place. After the first hour, the organisms are reduced to a very few, but over the subsequent days they increase steadily until they reach very large numbers in the kidney and may be the cause of death from about the seventh to the tenth day. Should the animal survive this period, the number of organisms in the kidney falls again. It is possible that this fall is due to the formation of an antibody, but so far none has been isolated. The period of high titer is associated with the formation of kidney abscesses.

THE ACQUISITION OF STAPHYLOCOCCI

A great deal has been done during the last 10 years to clear up our ideas about the way in which children acquire Staphylococci and where they come from. Probably the first observation of in-

terest in this field was that of Dolman, who pointed out, in 1935, that severe boils might be associated with the persistence of Staphylococci of the same phage type in the patient's nose. Studies have now shown that at birth children are usually free from these organisms, but that by the end of the first or second week of life practically every child has Staphylococci in his nose.

Attempts are currently being made to find the source of these organisms. It seems most likely that they come from the nurses who look after these infants, and it seems probable, though it is not yet certain, that they go from the nurses' noses to the nurses' hands and then either to the child's bed clothes or directly to the child.

For a time, it was thought that the Staphylococci might be acquired from the mother's nose or from lesions in her breasts, but that explanation is no longer credited. Instead, it is thought that the mother with a breast abscess has received the Staphylococcus from her child, who in turn received it from the nurse. In a home delivery, the time that elapses before the baby acquires Staphylococci from his association with adults may be longer, but the number of infants who acquire them is about the same.

It has also been found that after the first months of life the carrier rate falls off fairly steadily, and that at the age of six months only 23 per cent of children have Staphylococci in their noses. From then on, however, the incidence increases, until among adults it is somewhere around 70 per cent. The Staphylococci that these older people carry are not all coagulase positive ones, it should be noted. Many people have Staphylococci on their skins, but it seems almost certain, in view of the obvious frequency with which they can be observed to pass their hands near their noses, that the microorganisms were transferred from there.

Again, a number of people have Staphylococci in their stools. We have recently carried out a study of this kind in the patients and staff at University Hospitals, and have found, at least in our experience, that those with Staphylococci in their stools also have them in their noses. Fecal carriers may have a special interest in relation to staphylococcal enteritis, and I shall have more to say about that.

In this area, the use of phage typing of Staphylococci has been of immense value. It has been possible to show by this means that a particular Staphylococcus has at times spread throughout a nursery or throughout a ward. It has also been possible to show that people who have chronic boils carry the particular Staphylococcus that causes those boils. Much the same sort of thing has been shown to occur in other diseases, such as sycosis barbae.

Recent studies by Knight[4] have shown that patients coming into a hospital may be free of Staphylococci but, when followed over a period of weeks, have gradually picked up those organisms. To this extent it can be said that our hospitals may be modern pest houses. We have a focus of infection in our hospitals which it is important that we eradicate, so that people coming into them as patients may not acquire new diseases. In this age of chemotherapy, the old precautions regarding asepsis and prevention of infection through the use of masks and careful technic must not be thought to have been outmoded!

THE NORMAL HABITAT OF STAPHYLOCOCCI

It is worthwhile that I reiterate what I said in the preceding section: *The Staphylococcus grows in the human nose.* It spreads from there to the skin and, particularly, to the hands of the carriers, and from there it spreads to their clothing and to other surrounding objects. Thus, it is particularly important for nurses in infant nurseries to be careful in washing their hands, in order to prevent the spread of these especially dangerous organisms.

There are a few staphylococcal diseases in animals. Chronic abscesses in horses and cattle or swine have been called botriomycosis. This disease has been shown to be caused by the Staphylococcus aureus. There is also a staphylococcal septicemia in newborn lambs called tick pyemia, and there is a disease in turkeys which causes a chronic infection of the tendons. There is, however, no large focus of staphylococcal infections in animals that endangers human beings. Staphylococcal infection in man is spread from person to person and is maintained by the growth of the organism in the human nose!

CHILDHOOD INFECTIONS

Children are not born with any transplacental



Figure 3. Overnight growth of platings from 10-fold dilutions of mouse organ homogenate. Each Staphylococcus in the original is now represented by a colony.

immunity to Staphylococci. One of the most serious diseases of infancy is pneumonia due to these organisms. In 25 per cent of these cases, the illness is preceded by local sepsis such as impetigo or boils. The infant—and he is usually less than six months of age—appears extremely toxic and breathes rapidly. There may be severe fits of coughing and cyanosis. The illness is accompanied by high fever. On physical examination, one may find local consolidation, often in the lower parts of the lungs. X-rays show simple pneumonia or abscess formation and empyema. The abscesses are often multiple. When empyema occurs—and that is frequently—surgical treatment is necessary. Later in the disease, the abscesses are evacuated spontaneously and may be indistinguishable from congenital cysts on x-ray films that are taken at that time. Such cysts may result in pneumothorax and remain a danger for some time after the pneumonia has been cured. The death rate has been variously reported as from 20 to 50 per cent. In those who recover, complete healing of tissues is usual, and no residual lesion can be visualized on x-ray.

A CHARACTERISTIC CASE

A male child was born in a large hospital in 1953. It was noted that one of the nurses on duty in the infant nursery had a boil on her nose. On his sixth day, the infant developed conjunctivitis, and on his eighth day his mother also developed it. At about his sixth week of age, the infant suddenly developed a rectal temperature of 103-104° F. He was drowsy and irritable, and had a mild cough for two days. On the third day, his chest was fluoroscoped. Nothing abnormal was noted, and he was put on penicillin and streptomycin empirically. After three days of treatment there was no improvement, and the child was becoming fatigued by coughing spells, for he coughed to the point of syncope. The coughing made feeding difficult. He was admitted to the hospital, and x-rays showed large abscesses in both lungs (Figure 4). Hemolytic Staphylococcus aureus resistant to penicillin and streptomycin, and sensitive to erythromycin and Aureomycin was isolated from nose and throat cultures.

The infant was placed in a croupette and given Aureomycin and erythromycin by mouth. The next morning he was cyanosed, was breathing rapidly and appeared moribund. He slowly improved during the next three weeks. He was kept in the hospital an extra week as the result of worry over the possibility that a bulla might rupture. The two drugs were continued for two more weeks, and the Aureomycin was continued alone for a further two months. Three years later, the child is healthy and well developed, apart from some flaring of the lower ribs. The chest x-ray is normal. His mother developed a breast abscess during the third week of the infant's illness. It was successfully treated with erythromycin.

OSTEITIS AND OSTEOMYELITIS

In adults, an association between many cases of staphylococcal pneumonia and influenza has been clearly demonstrated. In children, these diseases often occur in the winter time, but to date, a clear association between them has not been made. Recent surveys in large hospitals with maternity units have shown the staphylococcal sepsis occurs in about 10 to 15 per cent of infants. It takes the form of deep and superficial skin sepsis and of conjunctivitis. It has been pointed out that infections of the eye in the first 24 to 48 hours of life are rarely due to Staphylococcus, but the ones that occur after the first week are frequently so.[8] Although osteomyelitis of older children is well recognized, the possibility that osteitis may occur in newborns is not so well known. Cases involving single bones (so-called benign osteitis) and cases involving many bones with a high mortality have been described. The occurrence of osteitis in the newborn is said to be increasing, and has been related to the prevalence of antibiotic-resistant Staphylococci in hospital personnel.

Osteomyelitis is a disease of children, most often boys, between 5 and 15 years of age. It is almost always due to the Staphylococcus aureus, and very often follows injury to a joint area. A careful history may reveal that during the week or so preceding the injury, the patient had had a superficial staphylococcal infection. The infection usually is found to have settled in the metaphyseal side of the epiphysis of the long bones. From there, it may spread to the cortex and under the periosteum. The onset is usually quite sudden, with a high fever, malaise and pain near a joint.

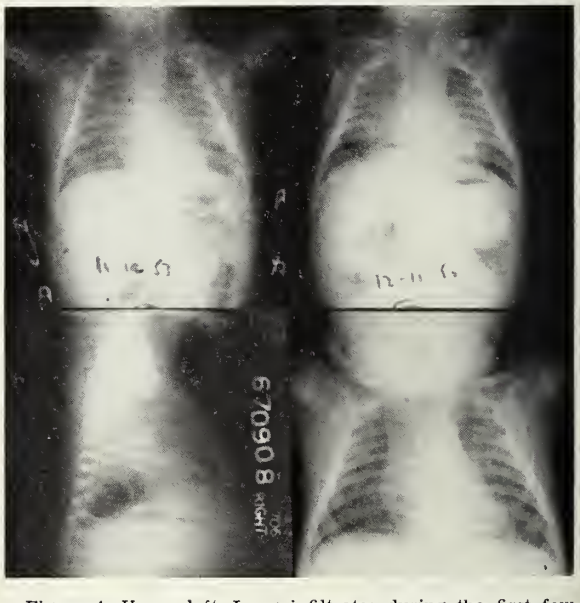


Figure 4. *Upper left.* Lung infiltrates during the first few days of illness. *Upper right.* Evacuated abscesses at the bases of both lungs at the height of the illness. *Lower left.* Lateral view on the same day. *Lower right.* Restoration of normal x-ray appearance after convalescence.

This is associated with a high white cell count. Changes may not be visible on x-ray until the end of the first or during the second week of illness.

The disease has to be differentiated from rheumatic fever and scurvy. Children with osteomyelitis are very sick, and an initial investigation should include swabs of the nose and examination of the blood for possible septicemia. It is obvious that these children must have an early bacteremia, but they are fairly resistant to subsequent septicemia. The remedy of choice is heavy antibiotic treatment, which should include penicillin but may necessitate another antibiotic if the organism proves resistant to penicillin. Surgical intervention is often necessary.

Staphylococcal infection in adults[1]

The commonest infections in adults are ones affecting the skin, and of course in that group boils are most numerous. They occur equally in the two sexes, with the exception that ones at the back of the neck are more frequent in males. This isolated difference may be the result of local irritations produced by men's collars, for other sites of local irritation have more than their fair share of boils. It is reasonable to suppose that the hands remove Staphylococci from the nose and deposit them as they scratch the points of irritation. Recognition of this chain of events has not, however, become general enough so that one hears of nose treatments' being given to people who are afflicted with recurrent boils. Carbuncles are boils with multiple centers, and very often they show evidence of necrosis as well. The patient with a carbuncle is much sicker than the patient with boils.



Figure 5. Pyoderma gangrenosum. Peripheral areas are active, and the central areas are healing.

Impetigo is usually a disease of school children. It is a pustular disease of the skin of the face, usually originating somewhere near the anterior nares and spreading across the face to form honey-type crusts. Some interesting work has recently shown that the majority of these patients are infected with phage type No. 71 Staphylococcus. It was found in at least 80 per cent of the cases in three series. This is a good example of the better understanding of staphylococcal disease that has developed recently. Impetigo sometimes occurs around the umbilical cord in the new born. This disease, at one time, was thought to be due to the Streptococcus.

An unpleasant kind of staphylococcal infection sometimes found in adults and often associated with ulcerative colitis is pyoderma gangrenosum. The necrotic lesions are circinate in outline, and are quite deeply punched out (Figure 5). The Staphylococcus can be cultured from the usually crusted margin of the area. We have recently had such a case at University Hospitals. A 76-year-old man had had severe necrotic lesions of the skin for eight years. He had the serious complication of staphylococcal pneumonia during the course of his infection, and we were able to get the Staphylococcus from his nose as well as from the other areas.

Staphylococcal pneumonia may occur in adults in any one of three situations. The patient may have pneumonia alone; he may have pneumonia with a preceding influenza infection; or the pneumonia may be a complication of staphylococcal septicemia. Patients with staphylococcal pneumonia are seriously ill, and the illness is usually sudden in onset. They may complain of cough and pain in the chest, and they usually have a fairly high fever. Quite frequently the sputum is either pink or tinged with blood. The patients with complicating influenza are often severely ill, with marked cyanosis. Quite often, pleurisy or empyema complicates the picture. The sputum is very purulent and may look not unlike staphylococcal pus from other areas.

Meningitis occurs occasionally as a complication of septicemia or middle-ear infection.

Staphylococcal septicemia

In septicemia, we have a morbid condition due to the presence of pathogenic bacteria and their associated poisons in the blood. Recently at SUI, we have been examining the cases of staphylococcal septicemia that have occurred during the past 20 years.[7] In the period 1936-1939, there were approximately 35 cases per year, with a mortality of 81 per cent. In the period 1940-1944, i.e., the sul-

fonamide period, there were approximately 15 cases per year, with a mortality of 72 per cent. In the period 1945-1949—the early penicillin period—there were approximately 7 cases per year, with a mortality of 63 per cent. The period 1950-1955 has shown an increase in cases to about 25 per year, and the mortality, as we shall see later, has been about 80 per cent.

These figures on mortalities are misleading as a result of the association with other fatal diseases such as leukemia. We have examined approximately 350 cases. In 17 per cent of them, the cultures were found to be positive only at autopsy, but there was other evidence of staphylococcal sepsis. The age range was from birth to 87 years, the second and seventh decades being particularly common among the male patients. The disease occurred twice as often in men as in women, but the mortality rates in the two groups were identical. Autopsies were carried out in about 200 cases, and the lungs and kidneys were found most often to have been affected. The disease quite often takes over when the host resistance has been damaged. That fact was substantiated by our finding tumors or leukemia in 17.3 per cent of cases; diabetes in 9.7 per cent; and a previous prostatectomy in 13 per cent (mostly early in the series). Recently, the cases have most often followed leukemia or the use of cortisone.

Significantly, the blood cultures in these cases were frequently only intermittently positive. Since lung complications were common, x-rays of the lungs were useful. Renal abscesses also being common, IVP's were taken of a few of our cases, and the results were helpful. Because of our previous interest in the growth of Staphylococci in the kidneys of mice, we wanted to measure renal function in these cases. Renal function appeared to have been much poorer in the fatal cases than in the ones from which the patients recovered. In a group of 248 cases in which no tumor was present, we analyzed the results of treatment. In the cases that did not receive treatment, the mortality was 86 per cent. When sulfa alone had been used, the mortality was 74 per cent. Sulfa and penicillin together had cut the mortality to 27 per cent, and in those cases in which penicillin had been used alone or in combination with drugs other than sulfa, the mortality was 25 per cent. We have not yet had an opportunity to differentiate between the group of patients who received low doses and the ones who received massive doses of penicillin. It is possible that the more recent treatment with high doses of penicillin with streptomycin may be producing a further drop in mortality.

The most serious cases in this group are those in which the heart valves are infected. The mortality in endocarditis is very high. The great majority of septicemias were caused by Staphylococcus aureus, but there were seven cases in which a Staphylococcus albus was isolated repeatedly and no other organism was found. Four of these patients died. It is therefore important for us to remember that occasionally Staphylococcus albus may cause a severe infection. Two of these cases followed valvulotomy, a situation in which host resistance is very low.

STAPHYLOCOCCAL ENTERITIS

Sudden diarrhea, oliguria, high fever, shock and death in patients receiving antibiotics have become increasingly frequent since 1948. It has been found that these patients have a diarrhea due to the Staphylococcus aureus, the result of the depression of the normal flora of the bowel by broad-spectrum antibiotics. This disease—staphylococcal pseudomembranous enterocolitis—is very similar to a disease that has been known since 1893 and which was observed following surgical operations of various types. It is now suggested that these diseases have the same cause—Staphylococci.

Dr. James Garfield, one of our residents, has recently described two of these cases which came under his care.[2] He has pointed out the need for speed in the diagnosis, and has shown that one must maintain a high index of suspicion in all diarrhea occurring during antibiotic treatment with broad-spectrum agents. Staphylococci can often be seen on direct smear of the stool, and when they are cultured, one must remember to use non-selective media. If the stools are grown on a medium such as one uses in looking for Salmonella or Shigella, the Staphylococcus may be missed. It must be cultured on blood agar or some such simple medium.

Many of these infections are caught in the hospital, where there are many carriers of antibiotic-resistant coagulase-positive Staphylococci among physicians and nurses. Outpatients have been shown to carry fewer Staphylococci in their noses and feces than do inpatients, and people coming from rural areas have been shown to carry fewer than do those from urban areas. Studies of patients in a ward show that the longer patients stay on the ward, the more likely they are to pick up Staphylococci.

The symptoms of this disease are caused by intoxication due to the elaboration of the important enterotoxin by the Staphylococci within the bowel. If the disease is suspected, broad-spectrum antibiotics should be stopped immediately, and treatment with one of the new agents such as Albamycin, to which the organisms have not yet become resistant, or with an uncommonly used antibiotic such as bacitracin is recommended. These people present a problem in fluid balance, and careful replacement of the electrolytes lost in the bowel has to be carried out. Frequently, they have to be treated for shock with noradrenaline.

REACTIVATION OF STAPHYLOCOCCAL DISEASE

Dubos[4] has drawn attention to the reactivation

of staphylococcal disease. It is known that all the cocci are not eliminated from the tissues of animals after antibiotic treatment. Also, we have seen the development of staphylococcal abscesses years after the apparent cure of septicemia. What brings these dormant cocci to life again? Here we have an analogy with the sleeper virus of herpes simplex in cold sores. It can be reawakened by a number of stimuli.

Lowered Host Resistance. In neonatal patients, in diabetics, in postoperative patients, in postpartum women, in children with fibrocystic disease of the pancreas and in patients with lymphoma or leukemia, there is increased susceptibility to staphylococcal infection. It is probable that further study will show other changes in the internal environment which interfere with host resistance in this situation.

Entrenched Family Infections. In a study of 1,142 families, Spence *et al.*[8] concentrated upon 20 families in which staphylococcal infection had persisted for many months or years. In a family consisting of grandfather and grandmother, their seven children, the eldest daughter's husband and their first child, the first staphylococcal infections had been boils in the grandfather in 1935. Boils, carbuncles, styes and other sepsis in members of the family had persisted over a period of 20 years. Since only one member of the family was treated each time, the Staphylococcus had survived undisturbed. Of the 110 people in the 20 families studied, a boy nine years old developed osteitis in the femur. That was the only serious complication.

THE DANGERS OF CORTISONE

In a recent paper, Shaper and Dyson[5] have reported two fatal cases of staphylococcal septicemia following the use of cortisone. A 39-year-old woman with active rheumatoid arthritis who had in the past had a staphylococcal abscess was treated with 200 mg. of cortisone daily, and she showed a great deal of improvement on that treatment. However, on the ninth day of the treatment, she started having a fever of about 103° F. Twenty-four hours later she developed shock, lapsed into coma and deteriorated quickly. At autopsy, the cortical surfaces of both kidneys were covered with numerous small abscesses, and death was due to staphylococcal septicemia.

The second case was a 56-year-old man with a primary exfoliative dermatitis. He had received 100 mg. of cortisone daily over a long period and also, at times, had received ACTH. Early in the second year of this treatment, he developed an abscess over his right elbow. About a week later, he began experiencing severe precordial pain, associated with dyspnea and auricular fibrillation. Within a week of the onset of the chest pain, his condition deteriorated rapidly, he became semiconscious and died. Pus was found in the meninges and in the pericardium. Two small abscesses were found in the myocardium, and there were several small abscesses in both kidneys. Death was due to staphylococcal septicemia.

Of our cases of septicemia, eight followed the use of cortisone and nine followed the use of ACTH for the treatment of some other disease. These of course are only a very small percentage of the patients who received these medications.

INCIDENCE OF STAPHYLOCOCCAL INFECTION

Spence *et al.*[8] noted 172 cases of conjunctivitis and 93 other cases of sepsis due to Staphylococcus in a study of 1,000 newborn infants. In the next 11 months, in that group, there were 139 further cases of conjunctivitis and 57 other cases of sepsis. Only two of the latter were serious, one of them being osteitis and the other pneumonia. Two cases of neonatal septicemia may have been staphylococcal, but no organism was isolated. Five per cent of children born at home and 10 per cent of those born in a hospital developed pustules. The incidences of conjunctivitis in these two groups were similar—15 and 17 per cent.

We need a great deal more information regarding the incidence of staphylococcal infections. It has recently been stated that staphylococcal pneumonia has increased in children, and that staphylococcal septicemia has increased in adults. Others have stated that the incidence of boils in the population has decreased. In an area with a stable population such as Iowa, it may be possible to answer some of these questions. Notification of staphylococcal disease in a restricted area, in one practice or in one hospital may help to verify or refute these claims.

In a recent survey of staphylococcal infections in Boston City Hospital, Finland and Jones[4] found that of 1,172 patients on all services of the hospital, 181 had some type of manifest staphylococcal infection, but only 68 of those infections had been present at the time of the patients' admission to the hospital. A number of the house staff and nurses also had significant staphylococcal infections. In the same hospital in 1955, of 914 autopsies in which adequate cultures were taken, 266 cases were found in which hemolytic Staphylococcus aureus was either the only or the predominant organism cultivated from the heart, blood, spleen, lungs or various other important primary foci of infection. Dr. M. E. Godfrey and I have recently shown a similar incidence of staphylococcal infections at University Hospitals, Iowa City.

The Staphylococcus is now the primary cause of invasive infection in our hospitals!

TREATMENT

Prophylaxis. Many patients acquire virulent Staphylococci in our hospitals, usually at a time when their resistance has been lowered by disease or therapy. McDermott[4] has pointed out how an unfortunate by-product of our lifesaving and life-

prolonging procedures is the creation of a favorable breeding place for Staphylococci. Security from secondary infection cannot be bought with antibiotics; it can be obtained only by vigorous attention to asepsis in all of our minor and major interruptions of the body's natural defenses!

A second line of defense is to identify dangerous carriers in our environment and to treat them vigorously. All of the carriers cannot be treated indiscriminately without adding to the number of antibiotic-resistant Staphylococci. Small outbreaks, however, can be studied, and the responsible carrier can be found and treated.

Spink[1] has said, "The control of cross infections in a hospital can be further accomplished by the enforcement of a uniform rule stating that all patients having staphylococcal sepsis should be strictly isolated. This regulation applies particularly to patients having open and exuding wounds and to those with staphylococcal respiratory infections."

Antibiotic Treatment. We can act upon faith, even if we don't have enough knowledge for intellectual satisfaction. In this spirit, it appears probable that penicillin is the drug of choice. Our choice of the right drugs for staphylococcal infections is in some measure empirical, but new studies by McCune and his group[1] in mice will probably indicate with more certainty which are the drugs of choice. There is still a need, however, for cooperative clinical studies of the type carried out by the Veterans Administration and the British Medical Research Council on Tuberculosis. Without these trials, our treatment is likely to be unsatisfactory.

In serious staphylococcal infection, penicillin can be a starting point for treatment. Some advocate using streptomycin with penicillin, for those two drugs have been shown to be synergistic in the treatment of infected mice. It may well be that combined therapy, as in tuberculosis, will delay the onset of resistance, although it is probable that a sensitive strain does not become resistant during treatment. Quite commonly, hospital-treated patients exchange their sensitive strain for the commonly present resistant strain being carried by members of the hospital staff.

In major infections, the organism should always be tested in the laboratory for *in vitro* sensitivities, and the drug of choice thus indicated should be added to the regimen. Dr. Murray Fisher's test of direct titration of the isolated organism against the patient's serum during treatment has a lot to commend it. In general, bactericidal drugs such as penicillin or bacitracin are preferable to bacteriostatic drugs such as the tetracyclines. Sulfadiazine has been useful in treating superficial sepsis, but since it has failed to control disseminated infection, its use is not recommended.

The temperature often falls like a bouncing ball, and the temptation to change the patient's regimen is great. Faith, again, is needed—or should we call it sound clinical judgment?

In some serious cases, one may wish to use a drug that is most likely still to be effective. In this situation, some physicians use erythromycin (to which 29 per cent of Staphylococci isolated in this hospital are resistant); others would use Chloromycetin (to which four per cent of our Staphylococci are resistant). And the new drug novobiocin (Albamycin) is also available. In New Zealand, one antibiotic has been withheld for general use and reserved for serious disseminated infections treated in hospitals. But there must be a better solution than that!

Surgical Treatment. It is important to remember that it is difficult to cure pus with antibiotics. Surgery is required. Furthermore, foreign bodies in a wound cripple the body's natural defenses. Elek[4] injected Staphylococci into the skins of human volunteers and produced experimental boils. When the Staphylococci were introduced into the skin on a suture, boils were also produced, provided that the suture was only drawn through the skin and removed. When the sutures were left *in situ,* however, severe local abscesses developed, ones which required drainage and vigorous antibiotic treatment. It was estimated that in this experiment the enhancing effect of the foreign-body reaction was at least 500-fold.

When staphylococcal septicemia continues despite antibiotic treatment, it is important to look for a septic focus which is feeding the organisms into the blood. In some cases, kidney abscesses can be drained with advantage to the patient.

Other Forms of Treatment. It is probable that local sepsis around an indwelling polyethylene catheter should be treated by the removal of the catheter and local medication with acriflavine, Dakin's fluid or some other local application, rather than with the widely-used antibiotics, at least initially.

Antiserum toxoid and bacteriophage have not been clearly shown to be beneficial, but they require much more study. Vaccine therapy with autogenous vaccines has produced good results in some people's hands.

THE FUTURE

There is a need for intensive research in staphylococcal diseases. These diseases are now probably the commonest infections encountered. We need a better differentiation of the potentially lethal strains. Phage types require more study in relation to specific entities. The determinants which lead to the establishment of tissue infection have to be defined. It is curious that crops of boils and recurrent infections are common. This lack of acquired immunity should be studied, and means should be developed to overcome it. Some new method of treatment in the non-antibiotic field is required, and the machinery for the clinical testing of new remedies on a wide basis should be established.

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Current Concepts in the Management of

Bleeding Peptic Ulcer

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DES MOINES

Peptic ulcer is responsible for between 60 and 75 per cent of all upper gastrointestinal bleeding, and for between 70 and 85 per cent of intragastric hemorrhage. The manifestations of bleeding from a peptic ulcer are hematemesis and/or melena. Massive bleeding occurs in 10 to 15 per cent of ulcer patients, usually in those between 40 and 50 years of age, and rarely in women.

PEPTIC ULCER AND ITS PATHOGENESIS

A peptic ulcer is a benign, sharply circumscribed defect or loss of tissue which extends into the muscularis mucosa or beyond, and appears in the areas of the alimentary tract that are bathed by acid-pepsin gastric juice. Peptic ulcer is not, however, merely a local lesion of the stomach or duodenum, but is a reflexion of the sustained duress of our civilization. It is one of the emotional, psychologic and biochemical manifestations that are constant challenges to the internist, the psychiatrist and the surgeon alike. About one individual in every ten develops a chronic peptic ulcer at some time during his life, according to autopsy statistics, and clinically, duodenal ulcers are four times more common than gastric ulcers.

The actual cause of peptic ulcer is unknown. Indeed it is likely to have a combination of causes. Acute peptic ulcers are now thought to begin as erosions or penetrations of the mucosa. The acute ulcer may then heal, it may be associated with bleeding or perforation, or it may become chronic. There are three highly credible theories for the causation of ulcers.

Gastric Acid and Pepsin. A benign ulcer occurs only in those areas of the gastrointestinal tract that are bathed by hydrochloric acid and pepsin. Ulcers are rarely if ever seen in patients having true and permanent anacidity or pernicious anemia. A peptic ulcer patient is known to be a hypersecretor of acid and gastric pepsin. The hydrochloric acid serves to devitalize the mucosal cells and to convert pepsinogen to pepsin. The pepsin then digests the devitalized cells.

Decreased Tissue Resistance. Although it is frequently suggested that some individuals have ulcers as a consequence of decreased tissue resistance, the reasons for the occurrence of such a phenomenon have not been determined. Some of the possibilities are intracellular abnormality of carbonic anhydrase, a loss of the protective effect of gastric mucus, or various vascular anomalies such as local ischemia or congestion, venous stasis or the presence of submucosal arteriovenous shunts. And it may be that there are associated factors such as exposure to cold, infection, anemia, fatigue, malnutrition and alcoholism.

Physical and Emotional Stress. Considerable evidence has been found to support the idea that sustained emotional duress plays a significant role in the pathogenesis and recurrence of peptic ulcer. The pathways of the stress mechanism lie through the hypothalamus, the anterior pituitary and the adrenal cortex. The production of adrenal corticoids is associated with an increase of uropepsin excretion in the urine.

Experimental peptic ulcer can be produced by continuous exposure of the gastric mucosa to hydrochloric acid, or with the use of parenteral histamine in beeswax.

Acute ulcers are found in association with increased vagal activity, increased adrenal cortical activity and decreased resistance of vasular tissue. Curling's ulcer is an example of the acute variety. It is found within a few days following extensive burns of skin. This ulcer may be single or multiple, and it may occur in either the stomach or the duodenum. The ulcer is produced in associa-

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tion with increased adrenal cortical activity, as well as with hemoconcentration and vascular thrombosis as a sequel to fluid loss.

Cushing's ulcer is another acute type. It is found with brain tumor, intracranial disease, certain infections of the nervous system such as poliomyelitis and meningitis, and brain surgery. It occurs as a result of certain neural mechanisms as well as hormonal changes. Both Curling and Cushing ulcers may bleed, perforate, heal or become chronic.

Steroid ulcers are more recently recognized examples of acute ulceration. They occur in susceptible individuals after seven or more days of ACTH or adrenal steroid therapy. Most commonly, these ulcers occur in conjunction with those steroids which possess little mineral effect—i.e., hydrocortisone and prednisone. They may bleed or perforate, but in many instances they do not cause patients to exhibit the usual symptoms of peptic ulcer. If the agents continue to be used, the ulcer may become chronic.

It is the chronic type which one commonly thinks of whenever he considers the possibility of benign peptic ulcer.

DIFFERENTIAL DIAGNOSIS

Although one must exclude the other possibilities, peptic ulcer is by far the commonest explanation for massive bleeding from the upper gastrointestinal tract. It should be the first consideration, even if the patient has failed to experience the sequence of epigastric pain, food and comfort. Twenty-five per cent of ulcers may bleed, even though the patient has experienced no previous symptoms of ulcer activity. On the other hand, one not uncommonly obtains a history of previous bleeding. Ulcers may bleed as a result of rupture of a vessel within the ulcer or in an adjacent area of gastritis. If the bleeding is tremendous, it usually is arterial in origin (pancreaticoduodenal, gastroduodenal or from the gastric coronary artery). If the vessel is sclerotic, a fatal outcome is likely. Often, one can make the diagnosis by obtaining roentgen studies of the stomach and duodenum following gentle manipulation when the patient is out of shock and not actively bleeding. The excretion of uropepsin is invariably high when bleeding is due to a peptic ulcer.

At least 20 per cent of bleeding cases are due to gastritis, duodenitis or esophagitis. The cause of bleeding may be gastritis or duodenitis even in the presence of a peptic ulcer. Esophagitis is found with moribund states and disease of the central nervous system, following extensive burns or trauma, with certain infectious diseases, and postoperatively with vomiting or intubation. The acute form of gastritis is quite commonly associated with the excessive use of aspirin or with the ingestion of alcohol. These lesions can be diagnosed with certainty only by means of a gastroscopic examination.

Upper gastrointestinal tract disease is associated with severe liver disease in 5 to 10 per cent of cases. The bleeding comes from an esophageal or gastric varix resulting from portal hypertension, from gastritis or esophagitis in association with congestion resulting from portal hypertension, or from a separate peptic ulcer. Hypoprothrombinemia may further complicate the findings. The vomited blood from a varix is somewhat darker than blood from an ulcer, it is venous blood, and it has had better opportunities for admixing with stomach acid before being expelled from the stomach. These patients usually exhibit other manifestations of parenchymal hepatic disease—i.e., jaundice, "liver palms," "spider nevi," pectoral alopecia, hepatomegaly and/or splenomegaly, ascites and/or edema, and recent hemorrhoids.

Hiatal hernia is often characterized by abdominal distress aggravated by eating, lying down or bending forward to tie a shoelace. Bleeding is due to esophagitis, congestion of the gastric mucosa, peptic ulceration in the herniated stomach or a separate lesion entirely.

Carcinoma of the stomach rarely bleeds massively; a slow bleeding is more likely. Patients who have cancer of the stomach often are in "the cancer age," they have had epigastric distress for a relatively short time, and they have experienced anorexia and weight loss. In such individuals, one may find a palpable epigastric mass, a "Blumer's shelf" or a "sentinel node."

The Mallory-Weiss syndrome is a condition which is usually seen in alcoholics who are continually retching and vomiting. A laceration of the mucosa at the esophago-gastric junction occurs and bleeds massively.

Advanced cardiac and/or pulmonary disease can cause hemorrhage. The bleeding is due to mucosal congestion and hypoxia, or to a separate concomitant lesion such as a peptic ulcer.

The blood may have been swallowed. One must always look for evidence of epistaxis, hemoptysis, or bleeding from the mouth or pharynx.

Blood dyscrasias constitute another set of possibilities. Polycythemia rubra vera is not uncommonly associated with peptic ulcer. Thrombocytopenic purpura may be essential (Werlhof's disease), or symptomatic (leukemia, various anemias, hypersplenism, infections, chemical poisons, snake venom, allergy or uremia). Non-thrombocytopenic purpura, such as Henoch-Schonlein, or the various hereditary hemorrhagic diatheses, may be indicated by a prolonged bleeding time, though the clotting time and platelet count are normal. There may be a capillary defect such as occurs in Willebrand's syndrome, or a qualitative defect in platelets causing abnormalities of either prothrombin consumption or clot retraction. Hereditary hemorrhagic telangiectasia is a condition in which there are multiple dilatations of capillaries and

venules in the skin and mucous membranes. The skin lesions are bright red, they vary in size from pin points to 3 mm. in diameter, they blanch on pressure, they may simulate "spider nevi" and they may form a nodular vascular tumor the size of a split pea. Bleeding from these areas is likely to occur.

SYMPTOMS AND SIGNS OF MASSIVE UPPER-GI BLEEDING

Hematemesis signifies a more rapid and extensive form of hemorrhage than does melena, since 50 or 60 ml. of blood in the stomach can produce a tarry stool. Melena may be the only symptom. One must realize that if the transit time through the gut is short, the blood may appear unaltered in the stool. The body's response to blood loss depends not only on the amount of loss but also upon the length of time during which the loss occurs. If as much as 350 to 500 ml. of blood is lost into the intestine within a relatively short time, no significant changes in circulatory dynamics will occur. The only history obtained may be of a sudden desire for defacation, with weakness, nausea and syncope following the passage of a tarry stool. Other complaints can be dizziness, headache, perspiration and thirst. These patients appear pale, distraught and enervated. The pulse is rapid and weak. The blood pressure may be either normal or low, depending upon the patient's ability to compensate for the blood loss by movement of fluid into the vascular compartment. Should the patient be obviously in shock, as evidenced by pallor, sweating, tachycardia, hypotension, restlessness, cyanosis of the fingertips and collapse, he has sustained a severe hemorrhage, and may have lost as much as 40 per cent of his normal blood volume.

In the first 12 to 24 hours, the hematocrit may be normal, or it may be elevated in spite of a severe blood loss. The ratio of red cells to plasma remains normal at first, since proportionate amounts of both have been lost. As blood volume is restored by hemodilution, the magnitude of the hemorrhage quickly becomes apparent. The rapidity of restoration of blood volume depends in great measure on the patient's state of hydration.

As a response to hemorrhage, the leukocyte count rises early and evidences a left shift. The white count is usually about 12,000. The platelet count increases early. The blood urea nitrogen becomes elevated as a result of the absorption of protein from the lumen of the gut, and decreased renal function as a result of shock and dehydration. Occasionally, the urea nitrogen level is raised by a hypochloremic alkalosis resulting from vomiting. The blood level in severe hemorrhage varies between 30 and 50 mg. per cent. A continued rise after 24 hours should indicate either continued bleeding or damaged kidneys. The temperature elevates to about 100° F. between the second and the fifth days if much blood remains in the gastrointestinal tract.

MEDICAL MANAGEMENT

Following the history taking and the physical examination, certain steps are taken to help establish the diagnosis and afford some basis of physiologic therapy. One should obtain a white-cell count, a blood differential, a red-cell count, hemoglobin and hematocrit determinations, and if possible a platelet count. Radioisotope studies will provide a rapid and accurate determination of circulatory blood volume. The bleeding and clotting times, the prothrombin time, and the results of a serology and a urinalysis are desirable. For later comparison, blood should be taken for a urea nitrogen determination. If the differential diagnosis is not clear, a serum bilirubin, a bromsulfalein determination, a chest x-ray and a flat-plate study of the abdomen may be helpful. If the patient has had severe vomiting, one may wish to know the results of an electrolyte survey, a measurement of CO_2 combining power and an electrocardiogram. It is essential to have 4,000 cc. of typed and crossmatched blood kept available in the blood bank. The internist and the surgeon must now work as a team.

If the patient has a hemoglobin of less than 50 per cent and a red cell count of less than 2,500,000, he is probably in hematogenic shock. He should be placed at bed rest. Blood is then replaced rapidly. For three or four hours, the blood can be given at the rate of one liter per hour, but if the patient is elderly or has cardiac disease, the rate of administration should be slowed after the third bottle. Such a patient must be watched closely for the possibility of left heart failure. Glucose may be started if there is some delay in getting blood from the bank. Shock blocks may be placed under the foot of the bed. Oxygen may be given if desired, five to 10 liters per minute by mask being adequate. The pulse and blood pressure are recorded every 30 minutes. Amytal or luminal, grains two or three, are given parenterally every four hours, as needed, for sedation. The patient will need frequent assurances from the doctor. For the control of pain—for there may be some associated with confusing nausea—Demerol is preferable to morphine.

The laboratory studies should be repeated frequently. In particular, hemoglobin and hematocrit determinations should be repeated every 12 hours. If the pulse and blood pressure do not stabilize or return to normal, one must find out (1) whether bleeding is continuing; (2) whether heart failure is present; (3) whether there is electrolyte imbalance; and (4) whether the shock is irreversible.

When is the patient out of shock? If severe dizziness or syncope results from tilting the patient to a 45° angle or having him sit up, he needs more blood. If his pulse is stable at 80 or 90 beats per minute, if his systolic blood pressure is over 90 mm. Hg., if his hematocrit is over 35 per cent, and if his urine flow from an indwelling catheter is

40 ml. per hour, he is no longer in shock. At this point, one must remember that the insensible fluid loss of a patient amounts to approximately one liter per day. This can be replaced as glucose in water, and in the absence of oliguria, extra potassium can be added to the infusion.

During this time, consideration must also be given to acid neutralization, maintenance of nutrition, and reduction of the motor and secretory activity of the stomach: A mixture of half milk and half cream, or Sustagen, is given. The mixture should be warm, and it is given in an amount varying between 30 and 120 ml. on the hour from 6:00 a.m. to 10:00 p.m., and then at two-hour intervals through the remainder of the night. Calcium carbonate, 0.9 Gm., and magnesium carbonate, 0.1 Gm., or Amphogel with milk of magnesia, 15-20 ml., is given every hour on the half hour from 6:30 a.m. to 9:30 p.m. and then every two hours during the night. (Any non-absorbable alkali is satisfactory.) Atropine, 1/100 grain, is given every six hours. If the patient is vomiting or refuses to eat, a tube should be passed into the stomach, and the above food and alkali should be given according to the following regimen: feeding for one hour; rest for one hour; suction for one hour. All fluid removed must be replaced parenterally both as to volume and electrolyte composition. When there has been no evidence of bleeding for 24 hours, the tube is removed. Vitamins, especially ascorbic acid, are needed. All fecal material and vomitus must be examined for blood. The patient must be watched for the possible development of a fecal impaction. Later the patient can be placed on a progressive ulcer regimen, but it is best to avoid "short-cuts" in treating peptic ulcer. At this time one may also add iron (especially if a Sippy regimen is followed) to replenish depleted iron stores.

SURGICAL TREATMENT

From a surgical standpoint, the problem of bleeding peptic ulcer resolves itself into the making of three decisions. One must decide which patients can be treated best by surgery; whether the surgery is emergent, urgent or elective; and what the surgery should accomplish. Before listing the criteria on which those decisions should be made, it is necessary that we review the factors which influence the outcome of bleeding.

Location of Bleeding. It is of some importance to know whether the peptic ulcer from which the patient is bleeding is located in the stomach or in the duodenum. The patient with a bleeding gastric ulcer is more likely to exsanguinate than is the patient with a bleeding duodenal ulcer. Massive hemorrhage from a gastric ulcer carries twice the mortality of massive hemorrhage from a duodenal ulcer.

Rapidity of Bleeding. Obviously, if the rate of bleeding is slow, blood can easily be replaced and medical therapy instituted without undue risk to the patient. If the bleeding is rapid, however, the outcome may be fatal. Rapid bleeding is generally considered under the heading of massive hemorrhage. Definitions of massive hemorrhage vary, so that in the literature mortality statistics vary rather markedly. For example, massive hemorrhage has been defined as that amount sufficient to endanger life. That is a poor sort of definition, for it implies that hemorrhage can occur *without* endangering life.

Perhaps the most useful classification of bleeding is that which has been formulated by Welch. He defines massive hemorrhage as one in which five or more pints of blood are required to restore circulation, or one which has lowered the hemoglobin level to 7 Gm. or less. If the hemoglobin level is between 7 and 10 Gm., or if less than five pints of blood are required to restore the circulation, the blood loss is classed as "moderately severe." All other blood losses are classed as minor.

Duration of Blood Loss. The longer bleeding persists, the less likely it is to stop. Furthermore, continued massive blood replacement may in itself lead to hemorrhagic states.

Conditions Under Which Bleeding Occurs. If a patient is already under good medical management and yet develops massive hemorrhage, it is unreasonable to expect that he will stop bleeding if one simply continues the medical management.

Recurrence of Bleeding. If a patient has bled in the past and presents himself with a new bleeding episode (whether massive or not), it is likely that he will bleed again, even though one may succeed in controlling the episode present on initial examination. Of patients in whom massive hemorrhage has been successfully managed without surgery, 25 per cent will bleed massively again. If bleeding recurs while such a patient is still in the hospital, one has especially strong evidence that medical management will thenceforth be an insufficient means of controlling the ulcer or the bleeding.

Persistence of Bleeding. Slow, persistent bleeding, despite good medical management, indicates that if the bleeding is to stop, surgery is required. Massive bleeding which continues will result in death unless surgical intervention is accomplished. A practical method of determining the persistence of bleeding and the need for emergency surgery in a patient with massive hemorrhage is the so-called transfusion response test described by Lipp:

"The patient who has had massive continuing hemorrhage with the classical picture of collapse should immediately have multiple blood transfusions in addition to the usual supportive measures. As much as 2,000 cc. of blood is given in one hour if needed. At the end of three hours, if there is no appreciable clinical improvement as indicated by an increase in blood pressure, a decrease in pulse rate and disappearance of air hunger, the patient is a candidate for immediate operative intervention

inasmuch as he is losing blood as fast as it is replaced and if allowed to persist, irreversible shock will ensue. If after three hours, clinical improvement is manifested, the treatment is continued and at the end of six hours blood replacement is stopped and the patient carefully watched for further evidence of bleeding. If bleeding commences again transfusions are again resumed and the patient is considered a candidate for emergency surgical intervention."

Age. Elderly patients tolerate blood loss and shock less well than younger patients. This is evidenced by the markedly higher mortality rates in bleeding duodenal ulcer patients over the age of 50. Arteriosclerosis in the eroded vessel, with its accompanying loss of vessel contractility, will interfere with the spontaneous arrest of bleeding.

The Patient's General Condition. Poor risk patients, i.e., those with associated cardiac, renal and pulmonary pathology, tolerate blood loss poorly. Consideration of such patients for prompt surgery, before the patient's condition can have deteriorated, will improve the mortality.

Blood Bank Facilities. At least 10 pints of blood should be available for emergency surgical procedures on bleeding ulcer patients. Therefore, if the supply of blood is low and an operation is to be performed, the surgery should be done before the supply of blood is exhausted.

Availability of Medical and Surgical Care. Operations of this sort should always be performed by a trained and capable surgical team. If none is available, medical management carries less risk than does surgery. If the patient recovers from an episode of bleeding but after his discharge will be in an area or in circumstances (i.e., merchant seaman on a freighter) where a surgical team is unavailable, then elective surgery is an important consideration.

From the foregoing, it is possible to list the indications for surgical intervention in cases of bleeding peptic ulcer:

Emergent

1. Massive hemorrhage in which normal pulse and blood pressure cannot be restored with four or five pints of blood rapidly administered
2. Massive hemorrhage with an initial good response, but with a recurrence of bleeding during hospitalization
3. Bleeding associated with performation or obstruction
4. Massive hemorrhage in a patient hospitalized for the treatment of peptic ulcer.

Urgent

1. Bleeding gastric ulcer
2. Persistent guaiac-positive stools for 10-14 days, even though the patient may be easily maintained by transfusions.

Elective

1. More than one episode of bleeding
2. One massive hemorrhage from a known ulcer in a patient over 45 years of age
3. Minor bleeding associated with chronic ulcer symptoms which in themselves would warrant surgery
4. Prospective lack of readily available emergency care.

Having decided to operate upon a given patient with a bleeding peptic ulcer, one has to make only one more decision. He has to choose the procedure to be accomplished. Ligation of vessels and suture of the ulcer bed are not satisfactory procedures, since they either do not control the bleeding initially, or the bleeding recurs postoperatively. The ideal surgical treatment is subtotal gastrectomy, with resection of the ulcer.

SUMMARY OF MANAGEMENT

The management of the bleeding peptic ulcer patient demands the combined services of internist and surgeon. Under such a plan, approximately 85 per cent of patients will be effectively controlled by medical means, and the 15 per cent requiring surgery will be detected early enough so that the operative mortality and the overall mortality in this disease are reduced to a minimum.

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Female Pseudo-Hermaphroditism

Clinical Report and Autopsy Finding of a Case With Adrenal Crisis

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CEDAR RAPIDS

ADRENAL CRISES IN children are uncommon, but since such crises may rapidly lead to death, prompt recognition and adequate treatment are most important. It is the purpose of this paper to present a child with pseudo-hermaphroditism in whom such a crisis occurred.

CASE REPORT

At examination shortly after birth, the patient was observed to have a markedly enlarged clitoris, resembling a small penis (Figure 1). The labia majora were hypertrophic, resembling scrotal folds. Genito-urinary studies revealed separate urethral and vaginal openings (Figure 2), though such a finding is unusual, since the majority of female pseudo-hermaphrodites have only a common urogenital sinus.

The pregnancy of the baby's mother had been uneventful, and her delivery had been normal. There is one other normal daughter in the family. Not infrequently, the adreno-genital syndrome is familial. The baby weighed 7 pounds 5½ ounces at birth, and was discharged from the newborn nursery at seven days of age, weighing 7 pounds. She was breast fed. When seen for a regular check-up at two weeks of age, she weighed 7 pounds 6 ounces and was doing very well.

When five weeks old, the baby was brought to the office. Her mother was frantic. The infant had vomited several times that same morning, and subsequently had become very listless. It was obvious that the baby was in shock. The child was hospitalized immediately, and on admission her respirations were shallow, she was cyanotic, and her heartbeat was slow and feeble. Her temperature was 103°F., rectally, and she was markedly dehydrated. An adrenal crisis was suspected because of the presence of pseudo-hermaphroditism. Immediate therapy consisted of adrenalin, 20 cc. of adrenocortical extract, cortisone, and intravenous 5 per cent glucose in saline, followed by plasma. Since at first a possible diagnosis of interstitial pneumonitis was also entertained, penicillin was given intravenously and chloramphenicol intramuscularly.

Within a few hours, the baby had improved remarkably. Within 24 hours, her temperature was

Dr. Block is a pediatrician and Dr. Tucker is a pathologist at St. Luke's Methodist Hospital. Dr. Block is indebted to Dr. Philip Crew for referring the case to him, and to Dr. John Kanealy for doing the genito-urinary studies.



Figure 1. Enlarged clitoris and hypertrophied labia.

normal, hydration had been reestablished and she took skimmed-milk formula well. X-ray examination of the chest was negative. The laboratory findings are summarized in Table 1.

TABLE I
LABORATORY FINDINGS

	June 11 (Admission)	*June 12*	*June 16*	*June 24 Day of Death*
Na	142.0 mEq.	—	141.0 mEq.	—
K	10.4 mEq.	—	9.3 mEq.	5.6 mEq.
Cl	140.0 mEq.	—	105.0 mEq.	99.0 mEq.
NPN	90.0 mg./ per cent	—	80.0 mg./ per cent	—
CO_2	—	—	—	25 vols. per cent
Hb.	—	9.8 Gm.	10.5 Gm.	—
RBC	—	2.98 million	3.5 million	—
WBC	—	11,000	11,350	—
Differential	—	Normal	Normal	—
Urine	—	Normal, except 10 granular casts per high power field	—	—

[1] Although the values for potassium are high, as anticipated, the values for sodium and chlorides are not low, although one would expect them to be low. The findings may have been distorted by the infant's dehydration at the time the blood samples were obtained.

During the following week, the baby progressed fairly satisfactorily. She was maintained on cortisone (6.25 mg. intramuscularly every 6 hours), in an attempt to suppress the excessive androgenic function of the adrenals that is responsible for pseudo-hermaphroditism. Two grams of salt were added to her formula daily to replace the excessive sodium loss which may occur with this type of adrenocortical imbalance. The infant also received chloramphenicol by mouth for the first five days of her hospitalization because of the large amounts of cortisone which were administered. She was afebrile from the second hospital day until the eighth, when she developed a fever of 103.2°F., rectally. The fever persisted thereafter. During the last two days of her life, she had episodes of dyspnea and cyanosis. A pulmonary infection was suspected, especially since children with pseudohermaphroditism are notoriously susceptible to infections. Heavy antibiotic therapy was resumed, and the baby was maintained with nearly continuous intravenous fluids. Adrenocortical extract again was injected, and the dose of cortisone was increased to 12.5 mg. every six hours. The infant became progressively weaker, and she expired on the fourteenth day of hospitalization.

For completeness, it should be mentioned that collection of urine for determination of 17-ketosteroids had to be interrupted because of the deterioration in the patient's condition. Also, for about 24 hours, cortisone was discontinued on the sixth hospital day and was replaced by desoxycorticosteroid acetate (DOCA). But since the baby did poorly that day, the substitute was abandoned and cortisone was resumed.



Figure 2. Catheter and Diodrast in vagina, and a second catheter in the urinary bladder.

AUTOPSY FINDINGS

External findings. There was a hypertrophied clitoris, strongly suggestive of female pseudo-hermaphroditism. The labia majora were hypertrophied, resembling scrotal folds, and there appeared to be separate urethral and vaginal openings. The body weighed 4,280 Gm. (9 pounds, 6 ounces), and was 58.0 cm. (22 inches) long.

Gross anatomic findings. The lungs were consolidated, the right one weighing 85 Gm. and the left 65 Gm. There were deposits of fibrin over the pleural surfaces, and on cut surfaces there were some focal abscesses ranging to 3 mm. in diameter. Elsewhere, the cut surfaces were red-purple and firm. The thymus weighed about 10 Gm. and was small. The adrenals appeared moderately hypertrophied, and each weighed about 5 Gm. When cut across, the cortex was yellow-brown, and the medulla was reddish-brown. Each kidney weighed 20 Gm. and had no abnormal features. The internal genitalia were those of a female, and there were no unusual findings (Figure 3). The urinary bladder and vagina were separate. Permission for a head examination was not obtained.

Microscopic findings. There was a confluent bronchopneumonia of the lungs, with many polynuclear leukocytes and a large amount of fibrin in the alveolar spaces (Figure 4). There was some atrophy of the thymus, with less than the usual number of oval thymocytes in both the cortex and the medulla. There appeared to be a hyper-

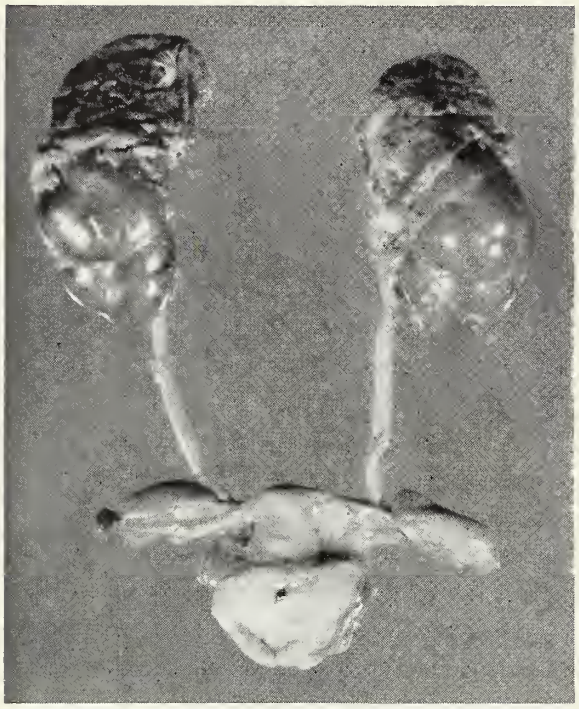


Figure 3. Relationship of adrenals, kidneys, ovaries, tubes and urinary bladder.

plasia of the cells in the zona reticularis of the adrenal cortex (Figure 5), with some atrophy of the cells of the zona glomerulosa, although these changes were not pronounced. There were several cortical adenomas which were microscopic in size. Microscopic examination of the kidneys revealed no abnormalities.

ADRENOCORTICAL PHYSIOLOGY

A brief review of the fundamentals of adrenocortical physiology might be useful. Among the various hormones produced by the adrenal cortex, the following three groups of endocrine substances are of special importance. Group I consists of 11-desoxycorticosteroids* which are involved in the regulation of the metabolism of water and certain electrolytes, primarily sodium and potassium (hence the name "salt hormone" or "Na-K hormone"). The recently discovered aldosterone is an even more powerful Na-K regulator. Group II consists of oxycorticosterones which promote gluconeogenesis and therefore have also been called "sugar hormones." They are also involved in protein and fat metabolism. Group III consists of a group of hormones related to androgen which promote nitrogen retention and have masculinizing properties. Their excretory transformation products are the 17-ketosteroids. It is the finding of a marked increase of these 17-ketosteroids (as determined from the urine) that is of great value in diagnosing pseudo-hermaphroditism.

The stimulus for the production of these hormones comes to the adrenal cortex from the pituitary gland in the form of an adrenocorticotrophic hormone (ACTH). Good classifications of the clinical syndromes produced by the hyper- as well as hypofunction of the adrenal cortex have been presented by Geppert *et al.*,[1] as well as by Deamer *et al.*[2]

Here, we are concerned with an anomalous function of the adrenal cortex resulting in an overproduction—or possibly a qualitative change[3]—in the hormones of Group III. If this phenomenon occurs *in utero*, the result, in the male infant, is macrogenitosomia, and in the female the result is pseudo-hermaphroditism. The case presented here is characteristic of the latter.

If the condition is acquired postnatally, it may be due to an "idiopathic" hypertrophy of the adrenal cortex, or to a tumor which is generally malignant. In rare instances, female pseudo-hermaphroditism occurs on a non-adrenal basis. Papadatos[4] has reported two such cases.

Pseudo-hermaphroditism may occur with or without disturbances in the production of the hormones of Group I. If there is a deficient production of the "salt hormones," Addison-like crises occur—such as have been described in this case.



Figure 4. Photomicrograph illustrating pneumonic exudate in the alveolar spaces of the lung.

* The acetate of these desoxycorticosterones ("DOCA") is the commercial product used therapeutically.

The Group II hormones are rarely, if ever, involved.

The symptoms of adrenal crisis in the infant are vomiting, dehydration, marked listlessness and evidence of impending shock. Since the symptoms of hypertrophic pyloric stenosis are very similar, this diagnosis may be made mistakenly when actually an adrenal insufficiency exists. Dehydration, if it persists stubbornly in spite of adequate parenteral fluid therapy, should always be suspected of indicating an adrenal insufficiency.

The typical laboratory findings are low values for sodium and chlorides, and high values for potassium and NPN. The treatment of an adrenal crisis has been outlined in the case report.

Though the fate of the female infant with pseudo-hermaphroditism is not a happy one, it is far from hopeless. Skeletal and muscular growth are accelerated. There is premature growth of genital hair. Breast development is poor, but it may be stimulated by means of estrogens. Menstruation fails to occur.

Adrenal crises can be prevented by long-term administration of DOCA or reliance on cortisone. Cortisone should be administered anyhow, to counteract the virilizing effects of the excess of androgens formed by the abnormally functioning adrenal glands.

SUMMARY

A case of female pseudo-hermaphroditism has been presented. The infant suffered an adrenal crisis that was treated successfully, but she afterwards succumbed to a severe bronchopneumonia.

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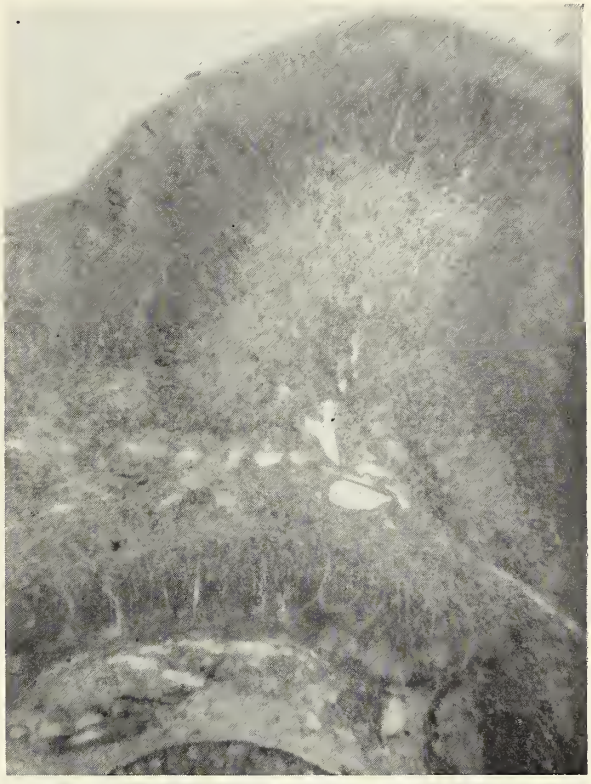


Figure 5. Microscopic section of adrenal, revealing hyperplasia of the zona reticularis and atrophy of the zona glomerulosa, suggestive of a correlation with the clinical findings of a hyperadrenocorticism with respect to the androgenic hormone, and hypoadrenocorticism with respect to electrolyte hormones.

AMA Model Law on Labeling of Dangerous Chemicals

In consequence of a recent study which showed that state statutes regulating the labeling of dangerous chemicals constitute a patchwork, the AMA will call a conference next fall for the drafting of a model law. Subsequently, state legislatures will be urged to adopt it.

According to Richard E. Conley, Ph.D., secretary of the AMA Committee on Toxicology, the new act will be designed as a means of reducing careless and ignorant handling of potentially harmful products in and around the home, in small businesses and in other areas where control of over-exposure to chemicals is relatively inefficient.

At present, only 52 per cent of the states require the labeling of caustics, and only 10 per cent require the labeling of industrial chemicals. Only New York, Indiana, Kansas and Connecticut regulate hazardous ingredients in household products.

Of the 46 states that have drug laws, only 19 have ones that conform to the Federal Food, Drug and Cosmetic Act of 1938, even though 40 per cent of all drugs sold are confined to intrastate commerce, Dr. Conley said.

Uniformity, in Dr. Conley's opinion, not only will offer greater protection to the users of chemicals, but will facilitate the educating of the public to the significance of warning labels. It will also spare manufacturers the necessity of special packaging and labeling of their products for shipment to various states, thus permitting reductions in the prices of the chemicals.

Functional Uterine Bleeding

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THE DIAGNOSIS OF functional uterine bleeding should be made only after one has performed the procedures that are necessary to rule out other causes of abnormal bleeding such as carcinoma, myoma, endometrial polyps, complications of pregnancy and blood dyscrasias. When we have ruled out those other possibilities, we are left with a group of cases for which disturbed hormonal relationships constitute the explanation. The application of the term *functional* to such bleeding abnormalities has been objected to, and with good reason. Certainly that term is less than ideal, and *dysfunctional* isn't a very good substitute. However, time and usage have so solidly entrenched the term *functional* in the field of gynecologic bleeding problems that it seems unlikely that we can now rid ourselves of it.

The majority of cases of abnormal uterine bleeding that end in the "functional" category are ones associated with anovulatory cycles. Therefore, we prefer to call this type of difficulty "anovulatory bleeding." If one examines the endometrium at the onset of such bleeding episode, he finds that it shows evidence of estrogen stimulation, but that progestational change is lacking. Usually the picture is that of prolonged estrogen stimulation, i.e., endometrial hyperplasia, but in order for one to make the diagnosis it is not necessary to find the classic picture of hyperplasia. Bleeding may occur from an endometrium that shows only proliferation in a degree indistinguishable from that seen in the pre-ovulatory phase of the normal ovulatory cycle. The finding of proliferative endometrium at the onset of bleeding has the same significance as the finding of endometrial hyperplasia.

The problem of anovulatory bleeding is encountered most often in two age groups: (1) the young teen-ager who is beginning to show the first evidence of ovarian activity; (2) the woman at the other end of the child-bearing years who is about to enter the menopause. In the young girl, it may be evidence of an incomplete responsiveness of the ovary to stimulation by the pituitary gonadotrophins, or it may be due to the fact that the secretion of the pituitary gonadotrophins is incomplete, in that the proper ratio of secretion of follicle-stimulating hormone and luteinizing hormone has not yet been achieved. Although the exact hormonal stimulus which initiates ovulation is not well understood, the best evidence indicates that no one hormone is responsible. It is likely that ovulation occurs when an optimal ratio of FSH and LH secretion occurs. In anovulatory cycles, it is reasonable to assume that there is an imbalance of secretion of these two hormones. It is unlikely that either hormone is completely absent, for it has been fairly well established that secretion of both hormones is necessary for estrogen secretion by the ovary, and the presence of estrogen effect is readily evident in the endometrium.

When anovulatory bleeding problems are encountered in the woman about to enter the menopause, it seems most likely that the ovary is becoming refractory to stimulation by the gonadotrophins because of natural aging. Episodes of anovulatory bleeding are also experienced by some women in their twenties and thirties. Occasionally these are associated with a recent pregnancy, but in others there is no recognizable precipitating factor.

THERAPY

The aim of therapy is not the same in the various age groups. In the teen-age girl, we should like to be able to stimulate a more nearly normal secretion of gonadotrophins, if possible. If not, we can very readily induce regular cyclic bleeding until the maturing process reaches the stage at which the secretion of gonadotrophins is occurring in a normal manner. Anovulatory bleeding in women approaching the menopause is an indication of failing ovarian function. Although sporadic ovulatory cycles may occur for several additional years, they are interspersed by frequent anovulatory ones associated with prolonged bleeding episodes which may be exsanguinating. In such patients, we wish to avoid the profuse bleeding periods until ovarian production of estrogen ceases.

Although the intent of therapy is different in patients of the two age groups, it has been found that the same type of therapy can be utilized effectively in both. It consists of the cyclic injection of a single dose of 25 mg. of progesterone in oil.

In the younger group of patients, the therapy is carried out as follows. After the diagnosis of anovulatory bleeding has been established through an examination of the endometrium at the onset of a bleeding episode, 25 mg. of progesterone is administered. Four days later, increased bleeding will occur because of the effect of the progesterone on the endometrium which has previously been subjected to estrogen stimulation alone. Regular cyclic bleeding can thereafter be induced through the administration of 25 mg. of progesterone on the twenty-fourth day of succeeding cycles. If bleeding fails to follow four days after the progesterone administration, there are three possible explanations: (1) Ovulation has occurred recently, in which

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event bleeding will appear within 14 days. (A single injection of progesterone will have no effect on an endometrium already in the secretory phase.) (2) The endometrial proliferation has not been sufficient to respond to progesterone stimulation. (3) The patient may be pregnant.

If bleeding occurs as expected, the progesterone is repeated on the twenty-fourth day of the next cycle. This schedule is continued until there is evidence that ovulation is occurring spontaneously, i.e., when bleeding fails to follow the expected pattern. If bleeding occurs earlier or later than four days following the administration of progesterone, therapy is withheld during the next cycle. An endometrial biopsy is obtained at the onset of the next bleeding. If the biopsy indicates that ovulation is occurring, the patient is requested to return only if, during succeeding months, the bleeding fails to occur at the expected times. Recurrence of anovulatory cycles is usually heralded by a lengthened cycle. In this event, one injection of progesterone is usually effective in re-initiating ovulatory cycles.

The purpose of the cyclic progesterone therapy in the older age group is to avoid the profuse bleeding periods until ovarian function ceases. This can easily be accomplished through administrations of 25 mg. of progesterone at intervals of approximately 30 days. Eventually, there will be no response to the doses, but the injections are continued for three additional months before one concludes that further therapy is unnecessary. If bleeding fails to occur after three injections at monthly intervals, it can be assumed that the patient has entered the menopause. Sporadic recrudescence of ovarian activity may appear within the next year or two, but prompt administration of progesterone at the onset of any subsequent bleeding will assure its being self-limited.

The alternatives to cyclic progesterone therapy in this age group are radiation castration or hysterectomy. Radiation castration is frequently followed by troublesome vasomotor menopausal symptoms. Hysterectomy is admittedly a radical treatment for a benign condition which can be satisfactorily handled non-surgically.

Adenotonsillectomy

G. OBREGON, M.D.

IOWA CITY

Adenotonsillectomy is one of the oldest of surgical procedures, but for the past 2,000 years it has been the subject of much controversy, chiefly because clinicians and researchers have been unable to offer a full explanation of the physiology of the tonsils and adenoids. In particular, there has been disagreement about the indications for the operation.

INDICATIONS

We believe that tonsils and adenoids should be removed in cases of (1) repeated attacks of either purulent or serous otitis media; (2) frequent or prolonged attacks of acute adenotonsillitis; (3) peritonsillar abscess; (4) marked nasal obstruction caused by hypertrophy of adenoid tissue; (5) hypertrophy of faucial tonsils causing difficulty in swallowing; (6) sinusitis and laryngitis secondary to adenotonsillitis; and (7) adenotonsillitis acting as a focus of infection in cases of glomerulo-nephritis and rheumatic heart disease. In cases of moderate perceptive hearing loss that are congenital in nature, and which occur in children, tonsils and adenoids should be removed as a prophylactic measure. Our decision for surgical intervention is based upon the history and physical findings.

Adenotonsillectomy is not to be considered a minor procedure. Full hospitalization, the taking of a complete history, physical examination, complete blood count and urinalysis are all indispensable. Bleeding tendencies should be investigated and corrected before the operation. Preoperative antibiotics are indicated in cases of congenital or acquired heart disease.

Child patients should be prepared psychologically for the operation. Most of us do not spend enough time explaining to them the why of the operation and what they can expect from it. A very clever phonograph record entitled "Peter Ponsil Lost His Tonsil," manufactured by Mercury Child-Craft Company, makes an interesting adventure of the whole experience and helps prepare the child for his operation.

A tonsillectomy should never be performed in the presence of an acute upper-respiratory infection, and three weeks should have elapsed since any such infection subsided. Preferably, the operation should not be performed during periods of high poliomyelitis incidence, but if it cannot be postponed for the requisite length of time, it is

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advisable, at least, to give two doses of Salk vaccine and then wait for a month. There is no reason why elective nose and throat operations should be postponed following vaccination, except for the fact that some time must elapse before the protective effect of the vaccine will come into play.

SURGERY

In spite of the numerous refinements that have been made in technics, instruments and anesthesia, the operation as it is performed all over the world at the present time is beyond any doubt one of the most poorly executed of surgical procedures. This is especially true of adenoidectomy, principally because of the difficulties that surgeons have in visualizing the nasopharynx. In a tonsillectomy, regardless of the technic that is to be used, identification of the proper plane for dissection is most important, and I advise always identifying the capsule of the tonsil first. I am convinced that a great deal of postoperative hemorrhage can be avoided if this simple advice is followed in every case.

As regards adenoidectomy, I do not approve of the use of the adenotome for the simple reason that the variations in configuration of the nasopharynx are so great that there is no single instrument that fits any individual patient. Routinely, we are using different types and sizes of curettes and the Meltzer punch forceps, the last being especially useful for the removal of lymphoid tissue from the fossa of Rosenmeuller.

A few years ago I tried removing adenoids by palpation of the nasopharynx. However, I was never satisfied with my results. In preference, for the past three years, I have been using a mirror and now do all my adenoidectomies under indirect vision. My results have been most gratifying with this method.

The anesthesia and pre-medication should be in the hands of a well-trained anesthetist.

For the postoperative care of a patient who has had an adenotonsillectomy, a recovery room is ideal. The patient remains there until he has fully recovered from the effects of the anesthesia. Thus the patients who are to succeed him upon the operating table cannot see him, and he is assured of receiving careful supervision during his immediate postoperative period. Oxygen and suction are readily available, and if there should be any bleeding or respiratory difficulty, he is where he can receive immediate and expert attention.

COMPLICATIONS

Bleeding is the most serious and frequent complication. If the operation has been well performed, secondary hemorrhage is rare. The tonsillar fossae should be inspected a few hours after the operation for the presence of a blood clot indicating a slow, hitherto unsuspected hemorrhage. Pulse and blood pressure should be checked every two hours until they have stabilized. Rising pulse, lowered blood pressure, pallor and sweating are indications of active bleeding. If bleeding occurs within 24 hours after operation, it usually is the result of incomplete hemostasis, tonsillar or adenoidal tags, loosening of ligatures, or the opening of a crushed or thrombosed vessel, possibly from the exertion of vomiting.

In our clinic, when these symptoms appear in a child, the patient is taken immediately to the operating room, where we have the advantages of good illumination and suction. The child is given a general anesthetic, and a venous puncture is done. A hemoglobin determination is carried out, and if there is a drop of 2 Gm. of hemoglobin per 100 cc. of blood and if our clinical findings concur with that determination, a transfusion is started. This procedure not only replaces the blood that has been lost but also exerts a hemostatic action. The possibility of such emergencies indicates the importance of preoperative blood studies, including a careful hemoglobin determination.

When the source of bleeding has been discovered, hemostasis is established by means either of a tie or of a suture. We very seldom resort to suturing the tonsillar pillars or to ligating the external carotid artery.

In adults, we use local anesthesia, and when the hemorrhage is mild, the bleeding point can be secured with a hemostat and tie. On occasion, a simple injection to the tonsillar fossae may control the bleeding, but in cases of brisk or persistent bleeding, the application of ligatures or sutures is advisable.

Bleeding from the nasopharynx can be controlled by pressure, by the instillation of fibrin in the nasopharynx, by chemical caustics or by the insertion of a post-nasal pack.

Late bleeding is caused by a sloughing of granulations, and as a rule it responds to simple measures such as pressure or the application of chemical caustics.

RECUPERATION

If no complications are present, fluids should be started as soon as nausea has disappeared. Ambulation on the second day is advisable, provided that there is no fever. The patient should be encouraged to chew gum, for mastication is beneficial to the musculature of the pharynx and aids in early healing. Gargles and local applications are of no use. Otalgia is fairly common following adenoidectomy, especially in children. If inspection reveals normal ears, the otalgia can be attributed to the postoperative reaction in the nasopharynx, and ice packs to the neck tend to relieve it. Sore throat will vary in severity and may last from 10 to 14 days in adults.

SUMMARY

The purpose of this paper has been to point out the indications for adenotonsillectomy and to re-

emphasize the important points in the preoperative and postoperative management of patients subjected to that operation.

I have called attention to the advantage of indirect visualization of the nasopharynx in the achieving of a complete adenoidectomy. The blind technic results in incomplete removal of adenoidal tissue.

Adenotonsillectomy should never be considered a minor operation.

State University of Iowa College of Medicine

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SUMMARY OF CLINICAL FINDINGS

A 34-YEAR-OLD WHITE man was admitted to a hospital in Iowa after an illness of five days. He complained of chills, fever, nausea, vomiting, marked weakness and a dull pain in the mid-abdomen. Achromycin was given, but produced no improvement.

Physical examination revealed scleral icterus, widening of the palpebral fissures, rapid pulse and a tense abdomen. The white blood cell count was 14,800 per cu. mm., with 89 per cent polymorphonuclears showing toxic granulation. Bile, albumin and a few hyaline and granular casts were present in the urine. The blood non-protein nitrogen was 33 mg./100 ml., serum bilirubin 3.08 mg./100 ml., cephalin flocculation 4+, thymol turbidity 12 units, total cholesterol 170 mg./100 ml., and cholesterol esters 90 mg./100 ml. A moderate amount of urobilinogen was present in the stool. The patient's temperature rose daily to 103 and 104°F., and he had episodes of shaking chills and profuse diaphoresis. Serial agglutination tests were negative for brucellosis, typhoid and paratyphoid fevers over a three-week period, as were heterophile antibody and leptospirosis agglutinations.

Achromycin, 0.5 Gm. every six hours, and Combiotic, 1.0 ml. intramuscularly every eight hours, were given for four days without effect. They were then discontinued, and Chloromycetin, 750 mg. every six hours, and aqueous penicillin, 250,000 units intramuscularly every three hours, were given. Meticorten was then administered, and the temperature abruptly reverted to normal, the jaundice cleared and a complete relief of symptoms occured. Four days later, the Chloromycetin and penicillin were discontinued. Withdrawal of the Meticorten was accompanied by a recrudescence of the fever and symptoms. Roentgenograms and fluoroscopy of the chest and abdomen were normal. A Graham-Cole test disclosed a faintly outlined gallbladder. Intravenous urograms were interpreted as normal. Repeated blood cultures were sterile. Upper abdominal pain appeared and was especially severe on the right. Meticorten was given a second time, accompanied by Achromycin, 750 mg. every six hours, and Triple Sulfa, 1.0 Gm. three times a day for one week, and again there was prompt relief of symptoms and return of temperature to normal. Repeated electrocardiograms showed only sinus tachycardia.

The patient was transferred to University Hospitals eight weeks following the onset of his illness. Here, the patient stated that his illness had begun suddenly one night with diffuse abdominal bloating and persistent pain in the right side of his abdomen. He became nauseated and vomited green, bitter liquid, but no blood or coffee-ground material. A diarrhea appeared, with loose green stools every hour, accompanied by chills and fever. On the sixth day, jaundice was first noted, and he was hospitalized.

Physical examination revealed jaundice and tenderness in the right upper abdominal quadrant, but no masses. The liver and spleen could not be palpated. Rectal examination revealed no mass or tenderness.

Chest x-ray films were interpreted as normal. There was non-visualization of the gallbladder. A gastrointestinal study was interpreted as showing a "normal stomach, which is dilated and shows signs of decompensation. Indeterminate duodenal bulb. The findings are highly suggestive of obstructive disease in the duodenum." That evening an x-ray film of the abdomen "showed moderate gastric dilatation, with the barium of the gastric series still contained within the fundus of the stomach. There is no evidence of ileus or abnormality of the rest of the abdomen." No free air was seen in the abdomen on this or on subsequent examinations.

The hemoglobin was 11 Gm./100 ml., and the white blood cell count was 18,500/cu. mm., with 82 per cent segmented polymorphonuclears, with

toxic granules. The urine was negative chemically and microscopically. The specific gravity was 1.020, and the pH was 6. A one-minute van den Bergh was 0.5 mg./100 ml., a 30-minute van den Bergh was 1.0 mg./100 ml., the alkaline phosphatase was 10.6 Bodansky units, the total cholesterol was 114 mg./100 ml., cholesterol esters 63 mg./100 ml., lipase 19 units, amylase 14 units, cephalin flocculation 3+ both in 24 and in 48 hours, thymol turbidity 4.1 units, bromsulphalein retention 40 per cent, and serum protein 6.0 Gm./100 ml., with an albumin-globulin ratio of 3.5:2.5. The blood urea nitrogen was 40 mg./100 ml., and the creatinine 3.8. The serum sodium was 137 mEq./100 ml., potassium 4.4, chloride 97 and CO_2 19.5 (on blood exposed to air after being drawn). The serum calcium was 9 mg./100 ml. The cerebrospinal fluid protein was 144 mg./100 ml., glucose 58 and chloride 120 mEq./L. Serologic tests for syphilis were negative. Examination of stool and rectal mucosal scrapings for Endameba histolytica were negative. Two of five blood cultures grew Escherichia coli sensitive to Chloromycetin.

During the 10 days of his hospitalization here, the patient's temperature fluctuated between 94 and 106.8°F. There were periods of delerium, coma, singultus, convulsions, flaccidity and shock. On the ninth day, the sensorium was clouded, and at times the patient was disoriented. His eyes stared wildly and moved rapidly about. There was no papilledema. He began having erratic, random muscular twitchings, and they became worse in spite of rectal Dilantin. The hand, pectoral and abdominal muscles were most involved. The white blood cell count was 93,800/cu. mm., with 32 per cent bands and 57 per cent polymorphonuclears.

There were occasional myelocytes and nucleated red cells in the peripheral blood. The patient was treated with 3,000,000 units of penicillin intramuscularly and Chloromycetin, 250 mg. by mouth every six hours. Later, Achromycin and streptomycin were given. One unit of blood was given on the fifth day, and two on the ninth day. On the tenth day of hospitalization—the day of death—the hemoglobin was 12 Gm./100 ml., the red blood cell count was 5,920,000/cu. mm., the white blood cell count was 163,800/cu. mm., and the platelet count was 28,000/cu. mm.

CLINICAL DISCUSSION

Dr. Edward E. Mason, Surgery: This week we have an especially interesting conference in that we shall have an opportunity to reverse the tables on the pathologist. Usually it is a clinician who works with the clinical data, and it is a pathologist who sits back with all of the information and the final diagnosis. Then, when or if the clinician fails to choose the right explanation, the pathologist can say, "Here is where you missed the boat."

Dr. L. E. Corcoran, Pathology, Veterans Administration Hospital, Des Moines: The problem confronting us today is that of a young man who suddenly was stricken with abdominal pain and bloating, then developed profound sepsis, with evidence of localization in the right upper abdominal quadrant, became mildly jaundiced, developed abnormal liver function, and terminally developed signs of cerebral cortical irritation—probably a leukemoid reaction—and ran a precipitous course and died after no more than nine weeks of illness.

Dr. Carl Gillies, Radiology: I can show you the x-rays, but I'm afraid they won't help you very much, Dr. Corcoran. Here is a film of the chest which was reported as normal and which I believe is normal.

Dr. Corcoran: Is the right diaphramatic dome normal?

Dr. Gillies: I should say so. It is higher than the left, but it is supposed to be. On examination, the gallbladder was found to be non-functioning. The test, perhaps, was not a true one, for the patient retained the dye in his stomach, and it could not be absorbed. His stomach did not empty normally, as was found at the gastrointestinal examination. During the examination, there was a complete lack of peristalsis; the duodenal bulb could be filled by manipulation and showed no abnormalities, but it did not fill spontaneously. A film at six hours showed that the stomach was greatly dilated, with no evidence of peristalsis. The patient had a considerable amount of gas in his stomach. Aside from a dilated and inactive stomach and a non-functioning gallbladder, the x-ray studies showed nothing abnormal. I understand that intravenous pyelograms were taken at another hospital, and that they were reported as normal, but we did not see them.

Dr. Corcoran: Instead of discussing the various diagnostic possibilities and then arriving at a diagnosis, I'll first say what I think the patient had and how he developed it, and then I'll try to defend that diagnosis.

From the information available in the protocol, it seems to me that the most likely diagnosis in this case was a pyogenic abscess or abscesses of the liver, with terminal metastatic abscesses to the brain and a leukemoid blood reaction. With few exceptions, all of the findings in the case are compatible with that diagnosis. In other words, the hyperpyrexia, severe rigors, profuse sweats, mild pain in the right upper quadrant (possibly in the region of the liver), the leukocytosis (although perhaps not quite so elevated as it should be), and the relative granulocytosis are all fairly typical of pyogenic abscess of the liver.

I must admit that I'm selecting a rare diagnosis. The most extensive review of this subject in the literature is one that Ochsner and his colleagues in New Orleans contributed to the AMERICAN JOUR-

nal of surgery in 1938,* in which they summarized 575 previous cases and added 47 of their own. Out of a total of 540,776 admissions at Charity Hospital during a 10-year period, there had been 42 cases—an incidence of .0077 per cent. And that was, of course, before the days of antibiotics. The incidence now should be much lower.

Abscesses of the liver are commonly divided into the amebic and the non-amebic or pyogenic types. Although amebic abscesses are three to four times commoner than are the pyogenic, I don't believe that this patient had an amebic one, for the onset of the amebic abscess is ordinarily more insidious, the fever is milder, there is not the severe prostration and there is only a moderate leukocytosis. The absence of a dysenteric history and the absence of parasites and ova in the colon help in the diagnosis, but of course we cannot be absolutely positive that there had never been any dysentery, for that condition frequently antedates the abscess considerably, and the patient may have completely forgotten it. In addition, we cannot exclude the possibility that an amebic abscess of the liver may have become secondarily infected and then may have behaved like a pyogenic abscess. Yet, the presence of secondary infection makes it difficult to demonstrate the parasites in tissue sections and, therefore, the differentiation may be impossible even following necropsy.

Pyogenic abscess of the liver may start in any of a variety of ways. The portal vein is the commonest pathway, for through its tributaries it drains the appendix and thus provides infected thrombi a direct route to the liver. As many as 34 per cent of the cases in the literature have started with appendicitis. This man could well have had a high-lying retrocecal appendix, with a mild case of appendicitis, a walled-off retrocecal or periappendiceal abscess, a pylephlebitis and then multiple abscesses of the liver. The original history of this man's pain is not well documented. We don't know how severe it was, where it started, where it radiated, or where it became localized and whether it required opiates for its relief. Our lack of information is somewhat disconcerting, for some of those factors could make considerable difference in our identification of the initiating lesion. Other lesions in the portal area can cause abscesses of the liver. Among them are infected hemorrhoids, diverticulitis, in rare cases ulcerative colitis and any neoplasm drained by the portal system, especially if it is ulcerated or infected. Frequently, metastatic carcinoma of the liver, with necrosis and secondary infection, can give all the signs and symptoms of hepatic abscess.

Another route by which pyogenic abscess of the liver may develop is by way of the biliary tree. The latter can not only provide the organisms but can provide the route by which the organisms reach the substance of the liver, and thus it is a common sequel of acute cholecystitis resulting from common-duct obstruction due to calculus. With secondary infection, there develops an ascending purulent cholangitis, followed by multiple abscesses of the liver and a typical clinical course of chills, fever and profuse diaphoresis. In liver abscess of whatever etiology, there is usually hepatomegaly. In Ochsner's collected series, the liver was enlarged in 89 per cent of the cases. Usually, any abscess of the liver involves the right lobe, because of the streamlining of the portal flow, and it is one of the few lesions that cause upward enlargement of the liver. Also, there is almost invaribly an involvement of the diaphragm, resulting in immobility or elevation of the right hemidiaphragm and frequently involvement of the right lower pulmonary field. Thus, the lack of liver enlargement and diaphragmatic irritation contraindicates the diagnosis of hepatic abscess, but perhaps I have an explanation for this.

I don't believe that this case was an example of ascending purulent cholangitis. First of all, there was no history of colic or previous gallbladder attacks. From the fact that the patient originally had a faintly outlined gallbladder, I assume that there was no serious disease of the gallbladder at the time. Also, had there been an ascending cholangitis, I think the function tests should have indicated a greater degree of obstructive jaundice. Certainly with a direct bilirubin value as low as 0.5 mg. per cent, there could not have been much obstruction.

Now traumatic and either penetrating or nonpenetrating injuries of the liver can result in hepatic abscess. When a sharp object such as a pin, a needle, a fish bone or a toothpick has been swallowed, it occasionlly perforates the stomach or duodenum and penetrates the liver, thus producing an abscess. Occasionally, external trauma to the liver results in necrosis of the liver and is followed by secondary infection and hepatic abscess, but there is nothing to indicate that either of these causes was operative in this case.

Hepatic abscess may develop by way of the hepatic artery, usually from subacute bacterial endocarditis. It may occur from other sources of infection such as osteomylitis, furunculosis, etc. Incidentally, I always feel that in any differential diagnosis of a Clinical Pathologic Conference case, there are four things that one should always consider, regardless of whether there is any indication at all that they may be present. One of these is subacute bacterial endocarditis; the second is tuberculosis; another is an occult neoplasm; and, of course, the fourth is collagen vascular disease. I don't believe that any of those diseases was present in this case.

There is a fairly large group of hepatic ab-

* Ochsner, A., DeBakey, M., and Murray, S.: Pyogenic abscess of liver; analysis of 47 cases with review of literature. Am. J. Surg., **40**:292-319, (Apr.) 1938; correction **40**:504, (June) 1938.

scesses in which the etiology is not forthcoming, and these belong to the cryptogenic or idiopathic group. In 60 per cent of Ochsner's cases, the source of the abscess was not demonstrable. Most authorities feel that the bacteria reach the liver from a small lesion in the portal area, and by the time the abscess develops, the lesion in the bowel drained by the portal vein has disappeared.

Finally, abscesses of the liver may develop by direct extension from an adjacent infective process, and I feel that this patient's abscess may well have developed in this fashion. Perforated ulcers of the stomach and duodenum have been incriminated occasionally as the causative factor in hepatic abscess. Subphrenic abscess occasionally results in hepatic abscess, and this patient might well have developed a subphrenic abscess as a result of a perforated viscus. However, again, one would expect more evidence of diaphragmatic involvement than was present here. A perinephritic abscess could have preceeded a liver abscess, but I should expect more evidence of urinary tract infection. Furthermore, there should have been more pain, and it should have been located in the loin rather than in the subcostal area, and probably it should have been evidenced by a red, bulging mass in the flank. But with the distortion of the duodenum seen on x-ray and with the history of the original attack in which there was rather severe pain, I suggest that this man may well have had a subacute perforation of a duodenal ulcer, probably on the superior aspect, then a local abscess with extension to the left lobe of the liver, and finally, perhaps, development of a solitary liver abscess. A solitary left-lobe abscess might explain the fact that there was no hepatic enlargement and also might explain the fact that the leukocytosis was not so high as one would expect with multiple liver abscesses. In Ochsner's series, the average leukocytosis in multiple abscesses was 27,000, which value is considerably higher than was present in this patient. This difference in leukocyte response may well have been due to the fact that antibiotics were not available in the period covered by Ochsner's report. In a recent report in the literature, a case is described in which antibiotics were administered in large doses prior to the diagnosis of a solitary abscess. Presumably as a result, the patient had a considerably more protracted course, and his leukocytosis was considerably lower than had been expected. Therefore, I postulate that this man's abscess, if he had one, may well have been altered to a certain degree by the use of antibiotics that caused the abscess to be walled off. Such a phenomenon would account for the future lack of response to the antibiotics and also for the lower leukocytosis.

The fact that there is no previous ulcer history of course doesn't help us in this diagnosis, but it is not essential, for frequently perforation or massive hemorrhage from a gastric or duodenal ulcer is the original symptom.

As mentioned, there are several factors inconsistent with a diagnosis of liver abscess. The foremost is the lack of hepatic enlargement, but perhaps this can be explained on the basis of a solitary abscess involving the left lobe rather than the right, and perhaps the altered response of the liver as a result of the use of antibiotics. Lack of elevation or immobility of the diaphragm, of course, doesn't help me in my diagnosis, but at least in Ochsner's series 20 per cent didn't show this. Why, I don't know. It would seem only logical that there should be diaphragmatic involvement with massive infection of the liver.

For the sake of completeness, I might mention a few other possibilities. Infectious hepatitis can be eliminated, for I think the course was much too severe for the average case of that disease, the onset was sudden rather than insidious, and there were septicemia and other factors. Leptospirosis, I think, has been well eliminated by agglutination studies. Also, there were no hemorrhagic phenomena, there was no indication of severe uremia early in the course, and there was no evidence of meningeal irritation. Against typhoid fever were the negative agglutinations and the fact that there should have been a leukopenia rather than a leukocytosis. Actinomycosis is a possibility, I suppose, but usually it is secondary or metastatic, having originated in some other region such as the cecum, and we have no indication that this man had had previous trouble in that area. Also, the course is usually not so precipitous as was this man's. Secondary infection in an echinococcus cyst is always a possibility. Usually there is eosinophilia, and there should be some symptoms of the presence of the cyst before it becomes secondarily infected. The liver probably should be enlarged, and the x-rays might well have shown calcification of the cyst wall. In a tropical area, malaria would be a possibility. Malaria and amebic abscess of the liver are extremely hard to differentiate. Against a diagnosis of malaria in this case, we have the fact that no mention has been made that the patient had come from an endemic area, or had stopped suppressive therapy. In addition, there should have been a leukopenia, rather than a leukocytosis, and there should have been more anemia than this man demonstrated. Primary carcinoma of the liver frequently causes the symptoms seen in this man, but again I think certainly there should have been an enlargement of the liver, and the liver should have been nodular. I've forgotten one thing. There was just one brief sentence in the early part of the protocol that mentioned widening of this man's palpebral fissures, a sign that suggests the possibility of thyrotoxicosis. Certainly the protocol does not suggest that that possibility was investigated, but even so, the effect of thyrotoxicosis on the liver is not an acute disease. Rather, it is a chronic one usually resulting in cirrhosis, rather than in an acute septic process.

To recapitulate, I propose that as the result

of a subacute perforation of a duodenal ulcer this patient developed a left-lobe, possibly solitary, pyogenic liver abscess. Next, I think, this patient developed metastatic abscesses to the cerebral cortex, a septicemia. Terminally. I think, he developed a septicemia and a leukemoid blood reaction. I cannot exclude the possibility of a retrocecal or appendiceal abscess resulting in a pylephlebitis and multiple liver abscesses. A subphrenic abscess cannot be completely excluded except for the lack of evidence of diaphragmatic irritation, and lastly, involvement of the pancreas cannot be excluded, especially a pancreatic abscess. No mention has been made of a widening of the duodenal loop, and I don't believe that that was visualized. The original attack, I think, would have been much more severe and would, at least, have required opiates if it had been pancreatitis. The normal value for amylase is helpful, but of course this far along in the course of the illness a negative amylase value is not of any great help. The lipase value is normal too, and I should expect a palpable mass in the region of the pancreas if it were involved by abscess or neoplasm.

Dr. Mason: Is the diagnosis agreeable to everyone in the room?

You have a lot of backing, Dr. Corcoran.

Dr. Jack M. Layton, Pathology: Autopsy disclosed septicopyemia associated with suppurative pylephlebitis complicating necrotizing appendicitis.

In the midportion of the vermiform appendix the entire wall was necrotic, and the organ was enveloped by organizing granulation tissue that extended also to involve the mesoappendix. The appendiceal vein contained puriform and thrombitic material, rather than blood. The infection had spread along the ileocolic, superior mesenteric and portal veins to produce suppurative pylephlebitis. The venous lesion was an actual inflammation of the walls of the veins, followed by partial or complete thrombosis. Multiple liver abscesses were produced by embolization of infected thrombi and bacterial clumps, as well as by direct extension of infection from the portal vein.

Additional evidence of septicopyemia included cultivation of Escherichia coli from the blood and liver, acute splenic tumor, mild subacute pyelonephritis, mild leptomeningitis, and congestion and cloudy swelling of abdominal viscera.

Extravasated blood was especially prominent in the epicardium and the myocardium. This feature was probably associated with thrombocytopenia, which presumably had developed secondary to the sepsis.

Dr. Corcoran: How large was the liver?

Dr. Layton: The liver was about twice normal size weighing over 3,100 Gm. On gross inspection, the upper surface of the liver was essentially normal. There was a fluctuant swelling about 5 cm. in size in the region of the porta hepatis.

Dr. Corcoran: Could you account for the distortion of the duodenum?

Dr. Layton: There were adhesions and evidence of cellulitis in this area. I suspect these findings of localized peritonitis also were associated with the lack of peristaltic movements of the bowel.

Staff Man: Was the brain examined?

Dr. Layton: Yes, and there was mild leptomeningitis.

Staff Man: No abscess?

Dr. Layton:? There was no abscess in the brain.

Perhaps I could ask some questions now, for the case is not altogether clear to me, even though I have been talking about it. One thing that I don't quite understand is the reason why the cortisone should have relieved the jaundice so abruptly. I have heard Dr. Eckhardt mention that this occurrence has been observed in cases of infectious hepatitis, but in my hearing he did not comment on the mechanism of the reaction. Is there anyone who cares to comment on this phenomenon?

Dr. James A. Clifton, Internal Medicine: I spent a year studying the effect of cortisone on biliary excretion, and I don't know the mechanism. It certainly is true that in infectious hepatitis the serum bilirubin level will fall following the administration of cortisone. This is thought to be the result of the anti-inflammatory action of the hormone. Some have postulated that an alteration in the rate of red-cell destruction is involved, but I am sure that the full answer is not known.

Our studies led us to conclude that cortisone and hydrocortisone do not possess either choleretic or hydrocholeretic properties in normal people, but we do not know why the serum bilirubin falls in inflammatory liver disease when these substances are given.

Dr. Corcoran: What was the clinical diagnosis—the working diagnosis—in this patient?

Dr. Mason: I'm glad you asked that question. I was called upon to see this patient when he was shaking all over and when someone was wondering whether he didn't have tetanus. By the time I got there he was completely flaccid, and it was obvious that he didn't have tetanus. Then a little later, I was asked to see the patient again because he appeared to have an obstruction at the outlet of his stomach, and there was some question that he might have an ulcer with perforation or cholecystitis or something else requiring surgery. I came up with the idea that he probably had a diffuse infection of the liver with abscess, and one of the things that made me think so was the way his temperature curved. It bounced from 107 down to 96°F., and then back up again. Thus, I think that in general we thought that he had an infection in his liver, and we weren't quite sure where it had come from. We weren't sure whether it was a pylephlebitis or choangitis or a perforated ulcer or the things that you mentioned. The one feature of this case that I don't understand—one that I'd like to ask Dr. McKee to explain— is how it happened that after the patient had been on antibiotics and then was put on Meticorten, everything

straightened out. Not only did his jaundice disappear, but his chills and fever stopped, and he began to eat and look well. He felt well, the antibiotics were stopped, and still nothing happened. He continued to do well for a few days, and then the Meticorten was stopped. Coincidental with the discontinuance of Meticorten, a flare up of all his symptoms occurred. Now why did this terrific pylephlebitis and liver abscess and all of the reaction around it respond to one of the corticoids?

Dr. Layton: What was the time interval between the discontinuance of the antibiotics and the discontinuance of the Meticorten?

Dr. Mason: Two days.

Dr. Albert P. McKee, Bacteriology: Frankly, I can't explain it. We have to admit that some of these patients on antibiotics and cortisone may suddenly support these unusual organisms. I do not mean to imply that Escherichia coli is an unusual organism in this circumstance. I refer to organisms like Pseudomonas aeruginosae that may cause a rapidly fatal septicemia. We also encounter pathogenic fungi that are supposed to be very unusual organisms, yet may even occur both at the same time and in the same patient. What the cortisone might have to do with these organisms, or what may have been the reason why this patient suddenly felt better when the antibiotics were stopped, I can't say at all. I do know that some of the pyogenic infections didn't seem adversely affected by the use of this drug. I admit that quite the opposite occurred in this case. An analogy along this line was a case of typhoid fever I once saw. The patient was very toxic and had a low agglutinin titer of S. typhosa, about 1:80. She was a diagnostic problem and was put on Chloromycetin and cortisone. In about 48 hours the patient began to look a little better, and within 48 more hours the antibody titer went from 1:80 to 1:5120. I don't believe she manufactured antibodies that fast, though I think she was manufacturing plenty of them, but in her case the antibiotic helped bring down the number of organisms so that one could find the antibody. In other words, it reduced the antigen to where one could find the antibody.

Dr. Layton: If you had a culture of Escherichia coli that was partly susceptible to an antibiotic—one of which the antibiotic could kill only a part—how long do you think it would take for the organisms to grow to a significant number again, following the discontinuance of the antibiotic?

Dr. McKee: Of course if you are asking how quickly the regrowth would occur *in vivo*—and that is the question to which all of us would like to have an answer—I can't possibly give you an accurate estimate. I can tell you only what would happen *in vitro*. Actually this particular organism, Escherichia coli, has been timed, and its generation has been found to take 15 minutes. That's under optimum conditions. Take 15 minutes and go ahead with a geometric progression, and within 24 hours you have astronomical numbers. Thus, I should guess that *in vivo* it wouldn't take very long—maybe 24 hours or even 20.

Dr. Layton: You see I was wondering about whether the two-day lag might not have been due to the beneficial effects of cortisone, but might rather have been a consequence of the organism's needing some time to start growing again after the discontinuance of the antibiotic.

Dr. McKee: When once it resumed growing, it wouldn't take long to obtain significant numbers.

Dr. Ian M. Smith, Internal Medicine: There is one situation that is parallel to this. One can take patients with pneumococcal pneumonia and treat them with ACTH.* They feel well, get up out of bed and look well. The lesions may not change in size, but there may be a circulation of pneumococcal organisms in the patients' blood, and relapse occurs pretty quickly. Thus, in pneumococcal pneumonia one can make the patient feel better in some instances without changing the number of organisms and without changing the lesion. In other cases, the lesion may get worse.

Dr. Emory D. Warner, Pathology: How long can one hold patients from a relapse?

Dr. Smith: From a few days to a week.

Dr. Mason: It was a matter of at least a week that our patient was doing quite well, and then because he was doing well, his physicians first stopped the antibiotics and then, a few days later, stopped the Meticorten.

Dr. Paul M. Seebohm, Internal Medicine: Was there any indication on the chart about the reason for administering Meticorten in the first place?

Dr. Mason: I think the patient was being treated with a wide range of antibiotics and wasn't improving. For that reason Metacorten was tried, and he seemed to respond to it. Meticorten was tried again for a short time after his admission to this hospital, and he was gradually weaned from it when he failed to get the same response.

SUMMARY OF NECROPSY FINDINGS

Acute and chronic necrotizing appendicitis, with perforation
Suppurative pylephlebitis
Multiple liver abscesses
Septicopyemia
Acute splenic tumor
Thrombocytopenia, with extravasated blood in epicardium and myocardium
Pyelonephritis, subacute, mild
Hydrothorax, bilateral
Ascites
Hemorrhagic cystitis
Organized thrombi in periprostatic veins.

*Kass E. H. Ingbar S. H. and Finland M.: Effects of Adrenocorticotrophic hormone in pneumonia: clinical bacteriological and serological studies. Ann. Int. Med. 33:1081-1098, (Nov.) 1950.

Coming Meetings

Out of State

July 1-3	**Diabetes & Endocrinology in Relation to General Medicine (Harvard University).** New England Deaconess Hospital, Boston
July 1-6	**International Congress of Occupational Health.** Helsinki, Finland
July 1-26	**Thyroid Disease and the Use of Radioactive Iodine (Harvard University).** Massachusetts General & Beth Israel Hospitals, Boston
July 1-26	**Diseases & Injuries of Bones and Joints.** College of Medical Evangelists, Los Angeles
July 1-31	**Clinical Heart Disease (Harvard University).** Peter Bent Brigham Hospital, Boston
July 6-12	**Seventh International Cancer Congress.** Royal Festival Hall, London
July 7-12	**Joint Meeting of Am. Assn. of Rehabilitation Therapists, Assn. for Physical & Mental Rehabilitation, and Assn. of Medical Directors & Coordinators,** Conrad Hilton Hotel, Chicago
July 8	**Neuromuscular Diseases: Cerebral Palsy.** Cook County Graduate School of Medicine, Chicago
July 8-10	**Obstetrics & Gynecology Seminar.** University of Colorado Medical Center, Denver
July 8-12	**Electrocardiography.** U.C.L.A., Los Angeles
July 8-12	**Fourth International Conference on Poliomyelitis.** Geneva, Switzerland
July 8-12	**Sixth Annual Symposium for GP's on TB and Other Chronic Pulmonary Diseases.** Sananac Lake, New York
July 8-12	**Complete Maternity Care (formerly American Congress on Obstetrics & Gynecology).** Palmer House, Chicago
July 8-13	**First American Congress of Legal Medicine & Law-Science Problems.** Morrison Hotel, Chicago
July 8-19	**Cystoscopy.** Cook County Graduate School of Medicine, Chicago
July 8-19	**Neuromuscular Diseases.** Cook County Graduate School of Medicine, Chicago
July 8-19	**Basic Principles in General Surgery.** Cook County Graduate School of Medicine, Chicago
July 8-19	**Electrocardiography & Heart Disease.** Cook County Graduate School of Medicine, Chicago
July 8-20	**Southern Pediatric Seminar.** Saluda, North Carolina
July 9-11	**International Society for the Welfare of Cripples.** London
July 10-11	**Rocky Mountain Cancer Conference.** Shirley-Savoy Hotel, Denver
July 11-13	**Dermatology for GP's.** University of Colorado Medical Center, Denver
July 13-27	**Rhinoplasty & Otoplasty.** Mt. Sinai Hospital, NYC
July 14-19	**International Gerontology Conference.** Merano-Bolzano, Italy
July 15-17	**Auscultation.** U.C.L.A., Los Angeles
July 15-19	**British Medical Association.** Newcastle-on-Tyne, England
July 15-20	**International Congress of Clinical Pathology.** Brussels, Belgium
July 15-26	**Surgical Technic.** Cook County Graduate School of Medicine, Chicago
July 20-21	**International Symposium on the Medical-Social Aspects of Senile Nervous Diseases.** Venice, Italy
July 21-28	**International Congress on Neurologic Sciences.** Brussels, Belgium
July 21-28	**International League Against Epilepsy.** Brussels, Belgium
July 22-25	**Ophthalmology (Glaucoma).** University of Colorado Medical Center, Denver
July 22-27	**Southern Pediatric Seminar.** Saluda, North Carolina
July 23-27	**Practical Psychiatry.** University of Washington, Seattle
July 24-29	**International Congress of Nutrition.** Paris
July 29-Aug. 2	**Poliomyelitis Refresher Course.** Children's Medical Center, Boston
July 31-Aug. 6	**International Congress of Dermatology.** Stockholm
August 1-3	**Current Concepts in Medicine.** U.C.L.A., Los Angeles
August 5-10	**International Symposium on Curare and Curarizing Substances.** University of Brazil, Rio de Janiero
August 5-16	**Cystoscopy.** Cook County Graduate School of Medicine, Chicago
August 7-9	**International Congress of the European Society of Haematologists.** Copenhagen, Denmark
August 11-17	**World Federation for Mental Health.** Copenhagen, Denmark
August 12-17	**Argentine Congress of Gastroenterology.** Salta, Argentina
August 19-30	**Electrocardiographic Interpretation.** Michael Reese Hospital, Chicago
August 19-30	**Surgical Technic.** Cook County Graduate School of Medicine, Chicago
Aug. 28-Sept. 3	**Congress of the International Society for Cell Biology.** St. Andrew's, Scotland
Aug. 29-31	**International Congress on Group Psychotherapy.** Zurich, Switzerland

AMA FILMS FOR LAYMAN AUDIENCES

"What doctors do as a group is sometimes more important than what they do individually." These are the words of news commentator John Cameron Swazy as he sets the stage in a new AMA film for a series of incidents documenting how organized medicine serves Americans everywhere. This 30-minute color presentation will be released to medical societies for local showings following its premiere during the AMA Public Relations Institute on August 28, in Chicago.

Titled "Whitehall 4-1500," the film tells the story behind this phone number, which puts the caller in touch with America's physicians as a group—the AMA headquarters in Chicago. Dramatic, short sequences show how the AMA helps save youngsters' lives through poison control activities, helps reduce highway deaths, helps place physicians in isolated areas, helps make jobs safer for industrial workers and life better for everyone. It reveals the story of AMA efforts to solve many current problems such as alcoholism and mental illness.

Three documentary mental health films, two of them originally Smith, Kline & French telecasts on the March of Medicine series, have been added to the AMA film library: (1) "We, the Mentally Ill"—Patients at St. Elizabeth's Hospital, Washington, D. C., present drama about mental illness based on the life of Dorothea Lynde Dix, mental health crusader; (2) "Alcoholism: the Revolving Door"—Presents new drug therapy, covers a meeting of Alcoholics Anonymous and dramatizes conditions on Skid Row; (3) "Man in Shadow"—Patients are shown at their daily routines in Cleveland State Hospital, and one patient's reactions to various forms of treatment are shown. The last of those, which runs 52 minutes rather than 30, was originally telecast on the Armstrong Circle Theater series.



AFTER MEDICINE, THE LAW

In a conversation with a group of physicians in Fort Dodge a few weeks ago, a prominent attorney made the observation that if the federal government ever succeeds in taking control of the practice of medicine, it will be only a question of time until it will preempt the practice of law as well. It is probable that few of us have done much thinking about that possibility, but the more one considers it, the more likely it seems.

Physicians have had misgivings as they have seen their services made into fringe benefits in labor-management contracts, and their alarm has stemmed from their conviction that any system by which the customer succeeds in persuading or forcing someone else to pay his bills for him is a step toward socialism.

Now, willy-nilly, Law is about to follow Medicine along the primrose path to the everlasting bonfire. According to a by-line story in the June 14 issue of the WALL STREET JOURNAL, "An employee's rowdy house party or his family squabble may become very much his employer's business shortly, if one group of union locals has its way." The six locals that compose the Los Angeles Joint Board of Hotel and Restaurant Employees has announced its intention of demanding that the employers of its 21,000 members contribute two cents per employee hour to a fund for prepayment of whatever legal expenses they may incur. The fund would not cushion the workers against alimony or fines, but in all cases at law, whether the employee were plaintiff or defendant and whether he won or lost, it would pay his lawyer's fees and court costs. The unions' current contracts with the Los Angeles hotels and restaurants are due to expire next January 15.

The ease with which Labor can get what it wants is characterized by the assurance with which Mr. John L. Cooper, president of the Joint Board, told the JOURNAL's representative that the unions' wage demands will be put into a tight, not-so-little package, and the employers won't have much chance to object to the items that it contains. Unions that negotiate for money and for fringe benefits separately, he conceded, would have some slight difficulty in following his lead.

Even this early it is apparent that in years to come the Los Angeles restauranteurs are almost certain to be billed more than two cents per employee hour to defray the costs of their cooks' and waiters' lawsuits. "The temperamental chef who runs into domestic discord," the JOURNAL points out, "will whack at least $175 from the fund if he gets into a divorce action. That's the price for an 'uncontested divorce'; a real battle may run to $10,000."

And then there are fringes of the fringe that will have to be considered. Since California has a public-defender system, should the fund hire a lawyer for someone who is entitled to a defense at state expense? How are individuals who enjoy lawsuits to be prevented from overutilizing their newly established benefits? Perhaps more significantly, some congressman or senator is sure to have the bright idea of transfering the mounting costs from the union and the employers onto the broad shoulders of Uncle Sam.

All of it sounds painfully familiar!

MEANS FOR AVOIDING LIABILITY HAZARDS

A new film that shows physicians how to avoid the recurrent headache of medical practice today, the professional liability claim, was premiered at the New York AMA meeting in June. Its title is "The Medical Defendant." It was produced by the pharmaceutical manufacturer W. S. Merrell Company in cooperation with the AMA and the American Bar Association, and county medical societies can borrow it for showings to their members by writing to the AMA Film Library, 535 North Dearborn Street, Chicago.

The moving picture presents four cases. In the first of them, a physician has been charged with negligence by a patient who received a burn during x-ray therapy. In the second, a doctor is sued because a colleague unthinkingly criticized his handling of an orthopedic patient. The third has to do with a contention that unnecessary surgery has been performed, and the fourth involves the consequences of medical advice given over the telephone.

Here are seven suggestions for the practicing physician who wishes to avoid liability involvement, as illustrated by "The Doctor Defendant."

1. Explain to the patient the proposed course of therapy and advise him when treatment may be hazardous.

2. Confirm in a letter to the patient the effects of treatment when harmful side actions or results might be expected. Obtain written consent for operative procedures. *Remember to keep a copy for your file.*

3. Review and interpret the clinical significance of all diagnostic or laboratory tests *before* a surgical procedure.

4. A precipitating cause of a large number of professional liability actions is the unthinking

comment of a physician on treatment given a patient by another physician. All the facts may not be known . . . so avoid tactless comment.

5. Always remember the protective value of a complete case record. It has been shown again and again that the doctor's best defensive tool in a professional liability claim or suit is the detailed case record.

6. All professional liability claims should be reported promptly to the proper persons; this may save time and unnecessary legal involvement.

7. Be constantly aware of the physician's responsibility to the patient. It is the physician alone who must decide the medical care to be provided.

SOME OBSERVATIONS ON NUTRITION

Dr. Margaret Ohlson, professor of internal medicine and director of the nutrition division at the S.U.I. College of Medicine. made some interesting remarks in addressing the Iowa City chapter of the American Association of University Women on May 18.

Three groups of people in this country, she declared, are currently underfed. Deficiencies in the diet of adolescent girls stand out in every study that is made, and in Dr. Ohlson's opinion, the frequency of eclampsia among girls who marry before they have completed their growth is one consequence of their malnutrition. Further, the long bones in their legs fail to complete their growth, and the girls' figures thus remain squatty. They also have a greater likelihood of becoming overweight than they might otherwise have had because the large muscles that use up a great deal of energy (and hence, calories) have been shortchanged.

The adolescent girl's refusal to eat, she speculates, may be a part of the social revolt that is characteristic of her age group. She balks at doing all of the things upon which her parents have insisted, and if eating certain amounts of certain foods has been in the disciplinary pattern, she refuses more or less automatically. Good eating habits, Dr. Ohlson pointed out, need to be built from babyhood. Good food and a pleasant family environment should be provided, and then the child's normal growth stimulus should be left to do the rest. Constant prodding will do more harm than good.

Mothers of growing children, Dr. Ohlson said, constitute another group of individuals who don't eat as they should. In the rush of providing breakfasts for the members of her family, such a woman takes time only for a hurried cup of coffee, then staves off hunger with more coffee and bits of starchy food from time to time. Her only proper meal is the evening one. In consequence, she gains weight but remains essentially undernourished.

The third group of whom Dr. Ohlson spoke are the families who regularly avail themselves of the pre-cooked package meals that have recently become available. Paying a big price for service in "T-V dinners" and other "heat and serve" foods, she declared, is often poor economy, for meal preparation can be simplified in other ways, without the sacrifice of either quantity or quality of nourishment.

TOLBUTAMIDE (ORINASE) MUST BE USED WITH CARE

An editorial in JAMA (June 1) cautions physicians that the Upjohn Company's newly-marketed product Orinase is not the "oral insulin" that some news stories have led the public to think. Though it has no known antibacterial action, it is a cousin of the sulfas. Its action resembles that of insulin in that it helps to control the amount of sugar in the blood. The JAMA editorial says it is most likely to help the diabetic who has a relatively mild case which developed after he reached the age of 30.

To the Upjohn Company's credit, it should be pointed out that the manufacturer has been even more conservative than the AMA as regards limiting the patients for whom Orinase may safely be prescribed. The Company's news release says it is ". . . effective in controlling blood sugar levels in mild to moderate cases of diabetes, particularly in those 40 years of age and older who require 40 units of insulin a day or less."

The JAMA editorial goes on to say that the drug *definitely cannot be used* in patients with (1) juvenile or growth-onset diabetes mellitus; (2) unstable or "brittle" diabetes; (3) a history of diabetic coma; (4) severe injury, gangrene, Raynaud's disease, or serious impairment of kidney or thyroid function; (5) malfunctioning or disease of the liver; or (6) diabetes adequately controlled by dietary restriction. Any physician, the editors say, should insist that during the initial test period, each patient on Orinase report to him daily. During the remainder of the first month, the patient should report weekly, and afterward he should come in at least once a month.

Plan to attend the 1958
ISMS Annual Meeting
Veterans Memorial Auditorium
Des Moines
April 20-23

A.M.A. House of Delegates, New York Meeting, June 3-7, 1957

A Condensation of the Report of George F. Lull, M.D., Secretary-General Manager

Revision of the Principles of Medical Ethics, relations with the United Mine Workers of America Welfare and Retirement Fund, the federal government's Medicare program, new standards for medical schools, a new statement on occupational health programs and the issue of Social Security benefits for physicians were among the wide variety of subjects acted upon by the House of Delegates at the American Medical Association's 106th Annual Meeting held June 3-7 in New York City.

Dr. Gunnar Gundersen of La Crosse, Wis., member of the A.M.A. Board of Trustees since 1948 and chairman for the past two years, was unanimously chosen president-elect for the year ahead. Dr. Gundersen, who also was first chairman of the Joint Commission on Accreditation of Hospitals from 1951 to 1953, will become president of the American Medical Association at the June, 1958, meeting in San Francisco. There he will succeed Dr. David B. Allman of Atlantic City, N.J., who became the 111th president at the Tuesday night inaugural ceremony in the Grand Ballroom of the Waldorf-Astoria Hotel.

NEW PRINCIPLES OF MEDICAL ETHICS

The House approved the long-discussed revision of the "Principles of Medical Ethics," originally submitted at the 1956 annual meeting in Chicago. The final version, presented by the Council on Constitution and Bylaws and then amended by reference committee and House discussions in New York, now reads as follows:

"*Preamble.* These principles are intended to aid physicians individually and collectively in maintaining a high level of ethical conduct. They are not laws but standards by which a physician may determine the propriety of his conduct in his relationship with patients, with colleagues, with members of allied professions, and with the public.

"*Section 1.* The principal objective of the medical profession is to render service to humanity with full respect for the dignity of man. Physicians should merit the confidence of patients entrusted to their care, rendering to each a full measure of service and devotion.

"*Section 2.* Physicians should strive continually to improve medical knowledge and skill, and should make available to their patients and colleagues the benefits of their professional attainments.

"*Section 3.* A physician should practice a method of heating founded on a scientific basis; and he should not voluntarily associate professionally with anyone who violates this principle.

"*Section 4.* The medical profession should safeguard the public and itself against physicians deficient in moral character or professional competence. Physicians should observe all laws, uphold the dignity and honor of the profession and accept its self-imposed disciplines. They should expose, without hesitation, illegal or unethical conduct of fellow members of the profession.

"*Section 5.* A physician may choose whom he will serve. In an emergency, however, he should render service to the best of his ability. Having undertaken the care of a patient, he may not neglect him; and unless he has been discharged he may discontinue his services only after giving adequate notice. He should not solicit patients.

"*Section 6.* A physician should not dispose of his services under terms or conditions which tend to interfere with or impair the free and complete exercise of his medical judgment and skill or tend to cause a deterioration of the quality of medical care.

"*Section 7.* In the practice of medicine a physician should limit the source of his professional income to medical services actually rendered by him, or under his supervision, to his patients. His fee should be commensurate with the services rendered and the patient's ability to pay. He should neither pay nor receive a commission for referral of patients. Drugs, remedies or appliances may be dispensed or supplied by the physician provided it is in the best interests of the patient.

"*Section 8.* A physician should seek consultation upon request; in doubtful or difficult cases; or whenever it appears that the quality of medical service may be enhanced thereby.

"*Section 9.* A physician may not reveal the confidence entrusted to him in the course of medical attendance, or the deficiencies he may observe in the character of patients, unless he is required to do so by law or unless it becomes necessary in order to protect the welfare of the individual or of the community.

"*Section 10.* The honored ideals of the medical profession imply that the responsibilities of the physician extend not only to the individual, but also to society where these responsibilities deserve his interest and participation in activities which

have the purpose of improving both the health and the well-being of the individual and the community."

In approving the new "Principles of Medical Ethics," the House of Delegates also reaffirmed the "Guides for Conduct for Physicians in Relationships with Institutions," adopted in 1951, and requested the Board of Trustees to devise and initiate a campaign to educate both physicians and the general public to the dangers inherent in the illegal corporate practice of medicine in its various forms.

GUIDES FOR RELATIONS WITH UMWA FUND

In a key action on the basic issue of third-party intervention, as it affects the patient's free choice of physician and the physician's method of remuneration, the House adopted the "Suggested Guides to Relationships Between State and County Medical Societies and the United Mine Workers of America Welfare and Retirement Fund," which were submitted by the A.M.A. Committee on Medical Care for Industrial Workers. In approving the guides, the House also recommended that the Board of Trustees study the feasibility and possibility of setting up similar guides for relations with other third-party groups such as management and labor union plans.

The statement, which outlines both medical society and UMWA responsibilities, contains these "General Guides":

"1. All persons, including the beneficiaries of a third-party medical program such as the UMWA Fund, should have available to them good medical care and should be free to select their own physicians from among those willing and able to render such service.

"2. Free choice of physician and hospital by the patient should be preserved:

"a. Every physician duly licensed by the state to practice medicine and surgery should be assumed at the outset to be competent in the field in which he claims to be, unless considered otherwise by his peers.

"b. A physician should accept only such terms or conditions for dispensing his services as will insure his free and complete exercise of independent medical judgment and skill, insure the quality of medical care, and avoid the exploitation of his services for financial profit.

"c. The medical profession does not concede to a third party such as the UMWA Welfare and Retirement Fund in a medical care program the prerogative of passing judgment on the treatment rendered by physicians, including the necessity of hospitalization, length of stay, and the like.

"3. A fee-for-service method of payment for physicians should be maintained except under unusual circumstances. These unusual circumstances shall be determined to exist only after a conference of the liaison committee and representatives of the Fund.

"4. The qualifications of physicians to be on the hospital staff and membership on the hospital staffs is to be determined solely by local hospital staffs and by local governing boards of hospitals."

THE MEDICARE PROGRAM

The House considered three resolutions dealing with the federal government's Medicare program for the dependents of servicemen. The delegates adopted one resolution condemning any payments under the Medicare program "to or on behalf of any resident, fellow, intern or other house officer in similar status who is participating in a training program." Government sanction of such payments, the House declared, would give impetus to the improper corporate practice of medicine by hospitals or other nonmedical bodies. Such proposals, the House added, would violate traditional patterns of American medical practices, seriously aggravate problems of hospital-physician relationships, encourage charges by hospitals for residents' services to patients not under the Medicare program, and create a variety of additional problems in such areas as medical licensure and health insurance.

In another action on Medicare, the House recommended that the decision on type of contract and whether or not a fee schedule is included in future contract negotiations should be left to individual state determination. In this connection, however, the House restated the A.M.A. contention that: the Dependent Medical Care Act as enacted by Congress does not require fixed fee schedules; the establishment of such schedules would be more expensive than permitting physicians to charge their normal fees, and fixed fee schedules would ultimately disrupt the economics of medical practice.

The House also suggested that the A.M.A. attempt to have existing Medicare regulations amended to incorporate the Association's policy that the practice of anesthesiology, pathology, radiology and physical medicine constitute the practice of medicine, and that fees for services by physicians in these specialties should be paid to the physician rendering the services.

NEW STATEMENT ON MEDICAL SCHOOLS

To replace the "Essentials of an Acceptable Medical School," initially approved by the House of Delegates in 1910 and most recently revised in 1951, the House adopted a new statement entitled "Functions and Structure of a Modern Medical School." Presentation of the document followed a year of careful study by the Council on Medical Education and Hospitals in collaboration with the Association of American Medical Colleges.

The statement is intended to provide flexible guides which will "assist in attaining medical education of ever higher standards" and "serve as general but not specific criteria in the medical school accreditation program." The document encourages soundly conceived experimentation in medical education, and it discourages excessive concern with standardization.

"No rigid curriculum can be prescribed for accomplishing the objectives of medical education," it states. "On the contrary, it is the responsibility of the faculty of each school continually to re-evaluate its curriculum and to provide in accordance with its own particular setting and in recognition of advances in science a sound and well-integrated educational program."

OCCUPATIONAL HEALTH PROGRAMS

The House also approved a new statement on the "Scope, Objectives and Functions of Occupational Health Programs," submitted through the Board of Trustees by the Council on Industrial Health. The Board report to the House said: "The statement describes and defines orthodox in-plant medical programs as understood in this country today and distinguishes clearly between such programs and the various plans for comprehensive medical care of the sick. It should help to resolve misunderstandings concerning the specialty of occupational medicine."

In adopting the statement, the House agreed with a reference committee report which declared that "the House has before it a statement which for the first time clearly defines the scope, objectives and functions of occupational health programs. It marks the needs and boundaries of occupational medicine. It states in a positive fashion the proper place of occupational health programs in the practice of medicine and it clearly charts the pathways of communcation between physicians in occupational health programs and physicians in the private practice of medicine."

SOCIAL SECURITY FOR DOCTORS

Two resolutions favoring compulsory inclusion of physicians in the federal Social Security system and another one calling for a nationwide referendum of A.M.A. members on the issue were rejected by the House. The delegates reaffirmed their opposition to compulsory coverage of physicians under the Old Age and Survivors Insurance provisions of the Social Security Act. They also recommended a strongly stepped-up informational program of education which will reach every member of the Association, explaining the reasons underlying the position of the House of Delegates on this issue. The House at the same time reaffirmed its support of the Jenkins-Keogh Bills.

MISCELLANEOUS ACTIONS

In considering 66 resolutions and many additional reports from the Board of Trustees, councils and committees, the House also:

Congratulated the Board and the Committee on *Poliomyelitis* for their prompt action in stimulating national interest in the polio immunization program;

Recommended further study and a progressive program of action, probably including legislative changes, to solve the problem of *narcotic addiction;*

Urged a more careful screening of television and radio patent medicine *advertisements;*

Directed the Board of Trustees to investigate the indiscriminate use of stimulants such as *amphetamine,* particularly in relation to athletic programs;

Directed the Speaker to appoint a committee of five House members to study the *Heller Report,* a management survey of the Association's organizational mechanisms;

Commended the Law Department for its special report on *professional liability* and urged state and county medical societies to establish claims prevention programs and to show the new film, "The Doctor Defendant";

Opposed the establishment of any further *veterans'* facilities for the care of non-service-connected illnesses of veterans;

Condemned the compulsory assessment of medical men and staff members by hospitals in *fund-raising campaigns;*

Commended the television program, *Dr. Hudson's Secret Journal,* its producers and its star, Mr. John Howard, for an outstanding contribution to the public interest and welfare.



At the second annual meeting of the Iowa Association of Medical Assistants, held in Des Moines May 25-26, 1957, Mrs. Marian Little, of Cedar Rapids, and Miss Bernice Conway, of Des Moines, received citations from the Iowa State Medical Society in recognition and appreciation of their work in organizing the group. Here, Miss Conway is shown receiving her letter from the hands of her employer, Dr. Floyd A. Springer.

President's Page

Within the past 20 months, the employees of physicians in this state have formed the Iowa Association of Medical Assistants as a means for their self-improvement and as a means for cultivating an attitude of dedication among themselves.

At an initial meeting in Des Moines in October, 1955, the state group was organized, with Mrs. Marian Little, of Cedar Rapids, as temporary chairman. The charter members then, at their own expense, succeeded in establishing 10 local chapters throughout Iowa. Mrs. Little was chosen as president at the first state convention of the organization in May, 1956, at Cedar Rapids. The second annual meeting of the state group, held in Des Moines six weeks ago, was attended by 125 persons.

In what we feel is a very wise arrangement, the Iowa Association of Medical Assistants set up an advisory board on which the constitution of the organization requires that three of the eight members shall be physicians selected by the Iowa State Medical Society. The board meets whenever necessary to direct the Association in its activities and to correlate its work so that it may operate most effectively in improving medical care and in bettering the efficiency of medical-office management.

The Iowa Association of Medical Assistants has the recognition and approval of the Iowa State Medical Society, just as its parent national organization has the sanction and cooperation of the American Medical Association.

At present there are 11 chapters of the Iowa Association of Medical Assistants, and though they are located in the larger towns throughout the state, many of their members are employed in small localities. Since it has been found that each doctor in America employs 1.4 office assistants, the membership potential of the organization is very considerable, and it is virtually certain that the Iowa group will grow rapidly.

The initiative that these women have taken in this attempt to find ways for improving their service to us physicians and to the public is highly commendable. Competent employees are the key to success for any enterprise that depends upon the public for patronage. Medicine certainly is no exception. First, the private practice of medicine involves business dealings for which we physicians have little time to spare. Yet they are extremely important, and whatever means our employees can devise for improving their efficiency in handling them will be most welcome. Second, the professional attitude that the Association will foster will be no less valuable to us. By taking special pride in their vocation and by setting the welfare of the patient above any self-interest, these ladies are going to help us even more than they have done in the past, and will achieve the recognition and reputation that they fully deserve, just as the nurses managed to do many years ago.

Fred Sternagel

President

THE JOURNAL *Book Shelf*



BOOKS RECEIVED

YEAR BOOK OF ORTHOPEDICS AND TRAUMATIC SURGERY, ed. by *Edward L. Compere*, M.D. (Chicago, The Year Book Publishers, Inc., 1957. $6.75).

THE CHANGING PATIENT-DOCTOR RELATIONSHIP, by *Martin G. Vorhaus*, M.D. (New York City, The Horizon Press, Inc., 1957. $3.95).

THE TREATMENT OF BURNS, by *Curtis P. Artz*, M.D., and *Eric Reiss*, M.D. (Philadelphia, W. B. Saunders Company, 1957. $7.50).

A TEXTBOOK OF HISTOLOGY, SEVENTH EDITION, by *Alexander A. Maximov*, M.D., and *William Bloom*, M.D. (Philadelphia, W. B. Saunders Company, 1957. $11.00).

A WOMAN DOCTOR LOOKS AT LOVE AND LIFE, by *Marion Hilliard*, M.D. (New York City, Doubleday & Company, Inc., 1957. $2.95).

VEGETABLE OILS IN NUTRITION, by *Dorothy M. Rathmann*, Ph.D. (New York City, for the Corn Products Refining Company, 1957. No Charge).

TEXTBOOK OF PATHOLOGY, by *Stanley L. Robbins*, M.D. (Philadelphia, W. B. Saunders Company, 1957. $.....).

HEALTH YEARBOOK, 1956, by *Oliver E. Byrd*, M.D. (Palo Alto, Stanford University Press, 1957. $5.00).

THE CHEMISTRY AND BIOLOGY OF PURINES, ed. by *G. E. W. Wolstenholme*, O.B.E., M.B., and *Cecilia M. O'Connor*, B.Sc. (Boston, Little, Brown & Company, 1957. $9.00).

REGULATION AND MODE OF ACTION OF THYROID HORMONES, ed. by *G. E. W. Wolstenholme*, O.B.E., M.B., and *Elaine E. P. Millar* (Boston, Little, Brown & Company, 1957. $8.50).

BOOK REVIEWS

A VISIT TO THE HOSPITAL, by *Francine Chase*, prepared under the direction of *Lester L. Coleman*, M.D., and with an introduction by *Flanders Dunbar*, M.D. (New York, Grosset and Dunlap, 1957. $1.50).

This small storybook was written especially for the child who is about to enter the hospital for surgery —particularly a tonsillectomy. The approach is such as to allay his fears, and its terminology is in keeping with a young child's limited ability to understand such a complex situation. One noteworthy aspect of the story is the allowance that is made, here and there, for variations in routine and equipment, such as wards and private rooms, cribs rather than standard hospital beds, etc.

Incidentally, my nine-year-old daughter enjoyed the content of the story, though it was less appropriate for her than it might have been a year ago, when she entered a hospital without any such preparation.

This book would be an excellent one for the physician to make available to his pediatric patients—perhaps as a part of an office lending-library program. —*M. E. Alberts*, M.D.

THE DIGESTIVE SYSTEM, PART THREE, DIGESTIVE SYSTEM: LIVER, BILIARY TRACT AND PANCREAS (The Ciba Collection of Medical Illustrations, Volume III), prepared by *Frank H. Netter*, M.D., and edited by *Ernest Oppenheimer*, M.D. (Summit, New Jersey, Ciba Pharmaceutical Products Company, 1957. $10.50).

The full-color illustrations in this volume consist of 29 plates of normal anatomy, 23 plates of physiology and pathophysiology, 56 plates of diseases of the liver, 16 plates of diseases of the gallbladder and biliary tract, and 9 plates of diseases of the pancreas.

Two volumes of medical illustrations (the nervous system and the reproductive system) have preceded this one. It is Ciba's plan to continue this service to the medical world by publishing similar volumes dealing with other phases of anatomy and pathophysiology. The inclusion of a bibliography makes this volume more valuable than its predecessors in the series.

Each of the full-color illustrations is accompanied by a discussion, and both presentations are well done. These volumes can be of great value to the physician in two ways: (1) as a study aid for himself; and (2) as a means for his showing patients the various aspects of anatomy or disease when they have expressed an interest in them.—*M. E. Alberts*, M.D.

CURRENT THERAPY, 1957, ed. by *Howard F. Conn*, M.D. (Philadelphia, W. B. Saunders Company, 1957. $11.00).

For those who are unfamiliar with CURRENT THERAPY, one might say that it is a large volume containing brief, authoritative descriptions of the up-to-date treatment of many medical, gynecologic, dermatologic and psychiatric conditions. It contains contributions from 250 of the foremost authorities, and each year Dr. Conn gathers their papers together to make up this excellent compendium. Each year the authors change, articles are rewritten and new subject matter is added. Thus, the book is kept up to date, and the successive issues are not mere revisions.

As in years past, the 1957 volume contains between 30 and 50 per cent new or significantly modified material. There are over 100 new treatments, and the book contains about 100 more pages. The treatment of hepatic coma, for example, has been improved upon, and the treatment of fibrositis has been rewritten and improved substantially. The reviewer would like to see a special section on the "tranquilizers" in the next volume, however, for the 1957 issue does not help the physician struggle out of the slough in which he now finds himself as regards rational medical therapy for the nervously upset individual.

However, in the opinion of this reviewer, the book remains a "super collossal," monumental effort, excellently conceived and documented. It certainly far surpasses anything else in its field and is a *must* for every practicing physician's library.—*Daniel A. Glomset,* M.D.

Practical Gynecology, Second Edition, by *Walter J. Reich,* M.D., and *Mitchell J. Nechtow,* M.D. (Philadelphia, J. B. Lippincott Company, 1957. $12.50).

This is an excellent text, designed principally for the general practitioner. The authors treat their subject in a very practical manner, and the presentation is such that one feels as if he were having a private and quite personal conversation with them. They have made every effort to practicalize and simplify.

There are several new additions in the second edition. They include "Pediatric Gynecology," "Geriatric Gynecology," "The Role of the Male in Gynecology" and "Radiation Therapy in Gynecology." In addition, there are very good sections on "Premarital Examinations and Counsel," "Psychosexual Incompatability" and "Sterility."

This book is a very practical reference book for the busy general practitioner, and one cannot help praising the excellent and profuse illustrations (many of them in color) and the excellent printing used in this text.—*H. Kirby Shiffler,* M.D.

Expectant Motherhood, Third Edition, by *Nicholson J. Eastman,* M.D. (Boston, Little, Brown & Company, 1957. $1.75).

This has been, and still is, a standard recommended book for any couple contemplating or beginning a pregnancy. It is complete and, amazingly enough, it is written so that non-medical people have no difficulty in following the text. For years, I have recommended that my patients use the earlier editions of it if they were interested in having a rather thorough understanding of the physiologic phenomenon of pregnancy.

Today, our lay magazines contain so many articles on the various facets of pregnancy—articles which are written more for their sensational value than for the benefits that such discussions can provide the individuals who are concerned—that an authoritative reference which is calm and understanding, yet thoroughly informative, is a definite aid to the obstetrician, as well as to the patient for whom it is intended.

The revised third edition continues to be the excellent, reassuring guidebook that its predecessors have been, discussing all the important phases of expectant motherhood.—*H. Kirby Shiffler,* M.D.

The Principles and Methods of Physical Diagnosis, Second Edition, by *Simon S. Leopold,* M.D., (Philadelphia, W. B. Saunders Company, 1957. $9.00).

In the preface to this second edition, the author expresses the alarm that he and others feel over the apparent inability of young internists to conduct an adequate physical examination and arrive at an intelligent conclusion from the observations that he has made. It is his hope that his text will stimulate the study of history taking and the technics of physical examination so that the reader will become a more competent bedside clinician.

The work is designed primarily for the medical student, and covers the defined field in succinct fashion. There is liberal use of black-and-white as well as colored illustrations. Especially refreshing has been the replacement of certain time-worn photographs that have been more or less standard in such texts. Correlation of physical findings with frozen gross sections of the thorax is especially helpful.

The value of this book to the individual internist cannot be predicted. The volume can be recommended as "refresher" material for those who will admit to having erred in diagnosis when physical signs present at the onset of illness were recognized only in retrospect.—*Samuel J. Zoeckler,* M.D.

BLACK COFFEE BRINGS ONLY AN ILLUSION OF SOBRIETY

Contrary to popular belief, neither exercise nor the administration of black coffee does anything toward making an intoxicated man capable of driving an automobile or piloting a plane. This conclusion is based upon studies* that have been conducted at the Harvard School of Public Health. The alcohol content of an individual's blood falls very slowly, the rate being no more than 10 ml. per hour (⅛ oz.).

In one experiment, a subject consumed the alcohol equivalent of eight highballs over a period of four hours. His blood alcohol reached 0.15 per cent in slightly more than two hours from the beginning of the period and remained above that level for about nine hours. Fourteen hours after he finished the last drink, his blood alcohol was still 0.09 per cent.

The investigators added that it is probably more important for alcohol to be eliminated from the brain and spinal fluid, and that process is even slower.

Such data are in part the basis for the commercial airlines' requirement that pilots abstain from liquor for 18 hours before flight time, and the investigators have suggested that commercial drivers be subjected to the same rule.

* McFarland, R. A., and Moore, R. C.: Human factors in highway safety. New England J. Med., 256:792ff., (Apr. 25) 1957.

Plan to Attend the 1958

ISMS Annual Meeting

Veterans Memorial Auditorium

Des Moines, April 20-23

AVOIDING MISUNDERSTANDINGS

Misunderstandings unfortunately can occur between physicians and patients, and as in most other matters, it is the physician who must assume major responsibility for avoiding them. More often than not, they have to do with fees, but occasionally they concern the patient's failure to understand the nature of his illness or the therapeutic regimen that the doctor wishes him to follow. In each instance, the doctor must be thorough in his explanations, and must be certain that he has phrased them in words that the patient is sure to understand.

Frequently, the physician is pressed for time, but since what he tells the patient is a most important part of the therapy, he must not ask his nurse to make the explanations for him, and he must not abbreviate the conversation. Merely telling the patient the diagnosis is insufficient, for he must remember that the patient has not had a medical education.

There are some special situations in which the doctor needs to vary his explanatory procedure. If the patient is too ill, too young or too senile, he should talk with a person who is responsible for him. Or it may be that the patient has a temperament which makes him almost anxious to misunderstand. Frequently a young husband or father is such an individual. He thinks he has as much intelligence as the physician, or perhaps even more; he has made his own diagnosis of the disorder; he is likely to take his medication or not, as he thinks best; and he is almost certain to think that the doctor makes too high a charge for his services. With such people, we must be especially careful, and we may fail to get across to them, no matter how hard we try.

Leaving an office assistant to explain charges or to give directions for medication can only lead to misunderstanding. No physician wants to overcharge, and those men who, by reason of their superior education, training or experience, are entitled to receive a premium for their work should take special pains to make sure that their patients understand the basis for their fees. If the patient knows approximately what the bill will be before he receives the doctor's statement, he won't be resentful.

The patient has a responsibility for avoiding misunderstandings as regards both what the doctor wants him to do and what the doctor will charge, but there is no certainty that he will assume it. Anytime that a question arises in the patient's mind concerning his disease, his treatment or the doctor's charges, he should talk with the doctor about it. But he must be reminded repeatedly to do so.

Just stop and think of your own experiences as a physician. In most cases in which a misunderstanding arose, hadn't you taken too much for granted?

Many patients do not understand the nature of the services that a physician renders. Too frequently, they fail to realize that the doctor's opinions, judgment and therapeutic directions are the commodities for which people are asked to pay, and think instead that the doctor is entitled to a fee only if he has administered a shot or has written a prescription. A point of view of this sort—myopic though it may be—is characteristic of many of the men and women with whom we deal, and though the doctor may find it extremely difficult, he must put himself in the patient's place if he is to be sure of making his explanations sufficiently thorough.

The process of explaining, cautioning and reminding is tedious and time-consuming, but there is no substitute!

DRY ICE POISONING

Asphyxia from dry ice is a potential hazard to motorists who use that method of cooling their automobiles during hot weather, according to Dr. A. L. Walter,* of Sedalia, Missouri. Since they drive with their car windows closed, carbon dioxide has a chance of replacing a considerable part of the air normally available to the drivers and passengers. Because the gas is odorless, they will fail to recognize what is happening. A 10 per cent concentration, according to the National Safety Council, can cause loss of consciousness, and larger proportions can be fatal.

He suggests alerting dealers in dry ice and suggesting that they warn their customers not to close their windows when they have dry ice in their cars.

* Walter, A. L.: Carbon dioxide intoxication. Missouri Med., 54:436, (May) 1957.

THE DOCTOR'S BUSINESS



Life Insurance Is a Part of Your Estate

HOWARD D. BAKER

WATERLOO

In this article, we shall discuss another of the means by which you can avoid incurring taxes on the property that you plan on leaving to your wife and children.

CHANGING OWNERSHIP OF YOUR LIFE INSURANCE

Prior to 1954, life insurance death benefits were always included in a decedent's gross estate, and thus were subject to inheritance tax, but subsequent changes have enabled men to spare their widows that expense. The necessary arrangement involves the sacrifice of some rights, but it is worth serious thought.

What must you do to qualify your insurance under these new provisions? The policies can still be on your life, and you may pay the premiums. They must, however, be *owned* by someone else. You will, of course, retain none of the usual perquisites such as the right to change beneficiary, to borrow on a policy, to pledge it as collateral for a loan or to surrender it for cash.

Depending upon the size of your taxable estate, the tax savings to your beneficiary on a $10,000 life insurance policy can range from $300 to $7,500.

Ideally, it is new life insurance policies of which one should make his wife the owner, for if he attempts transferring ownership of an existing policy, there is a possibility of his creating a gift-tax problem for himself.

Your individual course of action should be governed by the combined advice of your insurance counselor and the attorney who handles your estate plan.

COORDINATING LIFE INSURANCE WITH YOUR OTHER ASSETS

In most cases, life insurance is the major item in a professional man's net worth. Thus, both in planning his estate and in providing for his retirement, the doctor should give proper weight to his life insurance in relation to his other holdings. Coordination of life insurance with other assets means simply putting the pieces together in a plan that will provide maximum benefits to one's beneficiary in case he dies, or to himself in case he lives.

Let's consider the cases of a couple of hypothetical individuals who have failed to do so. Dr. A has insurance that will provide a clean-up fund, will pay off a mortgage and will provide Mrs. A $150 per month in the event of his death. Dr. A would like to be sure that she would have a minimum of $300 per month, and on the basis of the information so far provided, we should conclude that he needs to buy substantial amounts of additional life insurance. But the doctor has a medical building that would furnish his widow a substantial rental, and he owns stocks and bonds that would further supplement the money available to her for living expenses. Thus, perhaps, he needs to buy little or no additional life insurance.

Dr. B is planning for his retirement, and it has been determined that to achieve the goal he has set for himself, he will need to invest $175 each month until he reaches 65, half in fixed-income securities (bonds and preferred stocks) and half in variable-income securities (common stocks). But he has neglected to consider that when he reaches 65 his life insurance policies will have an aggregate cash value of $40,000. Through a proper recognition of that cash value, he may either reduce his monthly investments or make an upward revision in the retirement income that he anticipates for himself. More importantly, since the $40,000 cash value of his insurance at age 65 will be a fixed-income investment, he may choose to revise the ratio between his current purchases of fixed- and variable-income contracts.

Whether you are planning your estate, programing your life insurance, or planning for retirement, we cannot overemphasize the importance of your coordinating all of the factors.

STATE DEPARTMENT OF HEALTH

Edward D. Zimmer
COMMISSIONER

FACTORS IN PERINATAL MORTALITY*

The problem of perinatal mortality, for many years formidable and challenging, has been accentuated by the high level of births in the past decade. In 1954, there were about 137,400 perinatal deaths reported in the United States. Of this total, 70,100 were fetal deaths of 20 or more weeks' gestation and 67,300 were babies dying within one week of birth. Some progress has been made in reducing the perinatal mortality rate—it fell about one third between 1940 and 1954—but the improvement has lagged far behind that for maternal mortality, which decreased 86 per cent in the same period.

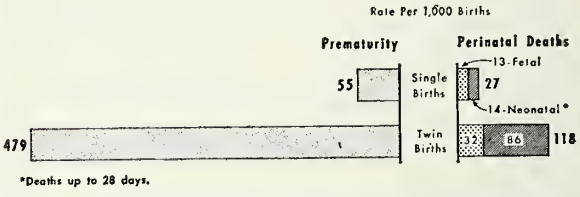
Various factors contribute to the death toll in the perinatal period.[1] One of the most important is lack of early and adequate prenatal care. Such care makes possible early detection of adverse conditions, which may in many cases be corrected, or where this is not possible, measures can be taken to protect the mother and child. Yet, a sizable proportion of women, particularly those who have already borne children, still fail to seek medical care early in pregnancy. A recent study in Iowa[2] showed that nearly one quarter of the women having their first baby and nearly half of those having a fourth or subsequent child had received no prenatal care during the first three months of pregnancy.

Plural births are subject to a considerably higher perinatal mortality than single births. The Iowa study showed that the fetal death rate for twins was 2½ times that for single births—even though such deaths among twins appear to be greatly underreported; the neonatal death rate among twins was six times that for single births, as may be seen from the accompanying chart. The high perinatal mortality for plural births reflects largely the high frequency of prematurity among them.

Pathologic conditions in the mother adversely affect the survivorship of the babies. A classic example is the high perinatal mortality among babies of diabetic mothers, which still persists to a large extent even with careful medical supervision during pregnancy and management of delivery, and with special measures for the newborn. For example, Joslin Clinic experience for 1936-51 showed a perinatal mortality of 16 per cent among babies of diabetic mothers.

INCIDENCE OF PREMATURITY AND PERINATAL MORTALITY IN SINGLE AND TWIN BIRTHS

Iowa 1953-54



Similarly, puerperal toxemia is generally associated with a high rate of perinatal loss, especially before birth. In a study covering the period 1931 through 1945,[3] the total perinatal loss in the presence of toxemia was about one third; most of these deaths were stillbirths or undelivered babies. Although the perinatal death toll associated with puerperal toxemia has since been reduced substantially, it is still relatively high.

Infectious disease in the mother, even when the infection is mild, may play a role in perinatal mortality. This is indicated in a recent study in England[4] of women admitted to a hospital for delivery. In a group of 99 mothers who showed no evidence of infection, all the babies were born alive and none died during the first week, whereas in a control group of 137 women with evidence of infection, there were 15 perinatal deaths. The prognosis for the infant was considerably poorer when the mother had a protracted fever.

* Reprinted, by permission, from the STATISTICAL BULLETIN of the Metropolitan Life Insurance Company, April, 1957.

[1] The article "Perinatal Mortality," in the April, 1956, issue of the STATISTICAL BULLETIN outlined the general scope of the problem and some of the factors involved, based chiefly upon analysis of vital statistics records. The present article deals with information on more specific factors from recent clinical studies.

[2] Donnelly, M. M.: Influence of multiple births on perinatal loss. AM. J. OBST. & GYNEC., 72:998ff., (Nov.) 1956.

[3] Chesley, L. C., Somers, W. H., and Vann, F. H.: Further follow-up study of eclampsia. AM. J. OBST. & GYNEC., 56:409ff., (Sept.) 1948.

[4] Smith, J. A. M., Jennison, R. F., and Langley, F. A.: Perinatal infection and perinatal death. LANCET, 2:903-906, (Nov. 3) 1956.

While modern surgical technics have made cesarean section quite safe for the mother, it is still attended with high risk to the infant, particularly in the face of complications of pregnancy, including prematurity. Nevertheless, expert consensus is that fetal mortality in these cases and in cesarean section generally can be reduced appreciably. This applies even to the very large group in which the indication for cesarean section is the delivery of a previous baby by this method, although the fetal mortality in such cases is lower than in cases where the procedure is used because of other reasons.

In the South, particularly among non-white women, the use of midwives is still fairly common, and in a residual number of cases the mother is unattended at delivery. The mortality occurring under these circumstances is obscured by the fact that the death may not be reported or that cases developing complications are often admitted late to a hospital, and the fatalities are reported as hospital deaths.

The high death toll among infants both before and soon after birth can be reduced through the wider application of present knowledge and the development of new knowledge regarding the factors affecting fetal and infant viability. It is of prime importance that women be educated to seek prenatal care early and to remain under continuous medical supervision throughout pregnancy. In the course of prenatal instruction, women should be alerted to signs and symptoms that may indicate impending complications. It is primarily the responsibility of physicians to see that prenatal instruction of mothers is adequate. It is also the responsibility of the medical profession to improve standards of obstetrical practice and, where deliveries by midwives are still frequent, to cooperate with health authorities in raising their standards of practice. Better knowledge of the physiology of respiration and management of the premature on the part of those attending the birth can help to prevent many deaths from asphyxia of the newborn and from prematurity. Such measures will bring closer the goal of reducing perinatal mortality by about one third—the proportion considered preventable even with present knowledge. Inasmuch as understanding of many of the factors in perinatal mortality is still rudimentary, there is great need for research in this field. A key figure in this program is the pathologist with special training in the basic problems affecting fetal life.

MORBIDITY REPORT FOR MONTH OF MAY

Disease	1957 May	1957 Apr.	1956 May	Most Cases Reported From These Counties
Diphtheria	0	2	2	
Scarlet Fever	66	143	85	Polk, Woodbury
Typhoid Fever	0	2	21	
Smallpox	0	0	0	
Measles	2189	1272	1402	Dubuque, Polk, Pottawattamie, Scott
Whooping Cough	30	8	47	Crawford, Pottawattamie
Brucellosis	22	13	9	Cedar, Jasper
Chickenpox	556	521	731	Dubuque, Polk, Pottawattamie
Meningococcic Meningitis	1	1	2	Pottawattamie
Mumps	549	458	233	Des Moines, Polk, Pottawattamie
Poliomyelitis	1	1	7	Page
Infectious Hepatitis	18	17	40	Dubuque, Woodbury
Rabies in Animals	33	24	13	Jefferson, Linn, Marshall, Mitchell
Malaria	0	0	0	
Psittacosis	1	1	1	Allamakee
Q Fever	0	0	0	
Tuberculosis	27	30	41	For the State
Syphilis	168	101	46	For the State
Gonorrhea	55	53	41	For the State
Histoplasmosis	0	0	0	
Food Intoxication	0	0	0	
Meningitis (type unspec.)	3	0	2	Clay, Polk
Diphtheria Carrier	0	0	0	
Asceptic Meningitis	0	0	0	
Salmonellosis	7	8	3	Polk
Blastomyecosis	0	0	0	
Tetanus	2	0	0	Pottawattamie, Warren
Chancroid	0	0	0	
Encephalitis	0	2	1	
Influenzal Meningitis	0	1	0	
Amebiasis	1	6	0	Page
Shigellosis	0	0	0	

PRECAUTIONS AGAINST ORIENTAL FLU

Dr. Leroy E. Burney, surgeon general of the U.S.P.H.S., took action in June to establish an advisory committee of physicians and health officers to consider precautionary steps in the United States against a spread to this hemisphere of the current influenza epidemic in the Far East. Apparently, the trouble abroad has been caused entirely by a new strain of influenza virus that cannot be controlled by current influenza vaccine. Many of the cases have been relatively mild, marked by a three or four day period of fever and other typical flu symptoms.

U.S.P.H.S. has provided samples of the new virus to vaccine manufacturers in the United States, and attempts to develop an effective vaccine are in progress. U.S.P.H.S. has developed antigens to serve in determining whether or not specific respiratory illnesses have been caused by the new strain of influenza. Until enough of these antigens are available for broad distribution, the Communicable Disease Center will make the identifying tests. All state health officers have been informed about the testing system.

Private physicians are asked to report to their state health officers if they encounter suspicious cases, so that any spread of the contagion to this country may be promptly recognized. Prompt treatment with antibiotics can prevent the bacterial complications which have been the cause of most influenza fatalities in the past. Travelers arriving from the Orient and the Philippines are being cautioned to see their private physicians if they develop a respiratory illness within 10 days after reaching this country.

Woman's Auxiliary News

OUR PRESIDENT SAYS—

Our state convention was a real success once again. Old acquaintanceships were renewed, the past year's accomplishments were reviewed and plans were formulated for the new year. The warm feeling of personal participation in a worthwhile organization remains, and we are eager to go forward to even greater success. Enthusiasm runs so high after each convention that it seems a great shame that we must immediately enter upon a period of comparative inactivity.

Don't let the relaxation and lethargy of these vacation months lessen your enthusiasm! By September, when our Auxiliaries begin their new year, let's do our best to display the same eager interest. It will serve us well! By then, let us not have lost any of the awareness that we had of being united and dedicated to a great purpose. I've often wondered whether it might not be a better plan for us to hold our annual meeting in the fall, so that we could be sure of putting the enthusiasm that it generates to a useful purpose. But that isn't the present arrangement, and I'm sure that all of us can achieve the same effect simply through reminding ourselves not to forget.

Besides being fun, vacations are useful as a means of renewing our energies. During the summer months, we are usually freed from much of the pressure of daily living, and we have more time to ourselves. Without sacrificing recreation, let's spend some of that free time in planning our Auxiliary projects!

Every county Auxiliary must determine how it can best serve. Use your informal get-togethers with other doctors' wives as occasions for discussing your ideas that would be most useful to your community. Let me hear from you, and I will do all I can to help. Then, when fall comes, you can begin your programs at once, and perhaps you will be able to carry into them the spark that was kindled at the convention and so enliven your entire year.

Let our motto for the summer months be: "Plan at leisure, and be ready for ACTION!"

—Sue Gerken

FOUND

A white nylon blouse was found in the East Room at the Savery Hotel during the Auxiliary's state convention. The owner is asked to write or phone Mrs. R. E. Hines, 3525 Witmer Parkway, Des Moines 10.

AMA AUXILIARY'S ROUNDTABLE ON LEGISLATION

The Washington, Ohio, New Jersey and Iowa delegations at the National Auxiliary's June convention in New York City gave individual reports of state Auxiliary activities in the field of legislation. In speaking for Iowa, Mrs. D. H. King reflected great credit on our state.

The delegates from Washington and from New Jersey reported that one of the technics used by doctors' wives to call the legislators' attention to the Auxiliary was to visit the legislative chambers in a body. In New Jersey, a friendly senator interrupted proceedings long enough to call attention to the Auxiliary members in the gallery.

Since the state meeting of the Iowa Auxiliary every other year is held while the General Assembly is in session, perhaps a visit to the statehouse might be made one of the items on the agenda. Such a trip would be educational and might be productive of valuable publicity.

Mr. C. Joseph Stetler, director of the Law Department of the AMA said, in addressing the roundtable session, that the AMA has come to realize the potential of the Auxiliary during the last few years, and to appreciate its efforts. He told of the tremendous number of health bills being introduced into Congress. During the current session, he said, the heavy pressure that is being exerted for the curbing of expenses is expected to dampen enthusiasm for such proposals. At present, the AMA is stressing the Jenkins-Keogh Bill and is attempting to educate doctors about the facts of Social Security.

Dr. Olin Meeker, of Connecticut, reported on the Social Security program. He said that $44,000,000,000 has been paid out so far, and that the plan faces further liabilities of $280,000,000,000, an amount that is greater than the $272,000,000,000 national debt. Every Congress, he went on to say, faces pressures for increased benefits, and though there should be periodic reviews of the program, none has ever been made by Congress.

Benefits and costs, he pointed out, have recently been raised once again. There has been a shift of emphasis so as to put the burden upon people with high incomes, who need Social Security less. He called attention to the fact that the term *insurance* is misleading when it is applied to such a scheme as Social Security. The Social Security assessment is a tax, rather than an insurance premium, for the money goes into the federal treasury, rather than into a separate fund to be

used only for the payment of benefits. And furthermore, the benefits that Social Security pays have long been completely disproportional to the amounts of Social Security tax that are collected. Our laws would permit no commercial insurance company to operate on such an actuarially unsound basis.

Mr. Warren Wyte, secretary of the AMA Committee on Legislation, told of the "key man" program for state legislation contacts. Through such an individual doctor, particular lawmakers can be reached with a minimum of confusion and a maximum of effectiveness.

IN MEMORIAM

The Auxiliary was greatly saddened to learn of the death, last month, of its past president, Mrs. L. A. Coffin, of Farmington. Because, before her marriage, she had been a nurse, Mrs. Coffin had a first-hand knowledge of many of the problems for which the Auxiliary strives to find solutions, and she worked diligently and unceasingly toward achieving the objectives of the organization. Everyone who knew her will remember her as having been a truly gracious lady and a loyal friend.

COUNTY AUXILIARIES

BLACK HAWK

About 50 members of the Black Hawk Medical Auxiliary attended the traditional May Breakfast at the Sunnyside Country Club, held this year in honor of Mrs. J. F. Gerken, the newly-installed president of the State Auxiliary. Mrs. Carl Hanson, newly installed president of the Black Hawk County Auxiliary presented Mrs. Gerken a corsage. A brief business session at the close of the meeting included a report on the state convention given by Mrs. Hanson.

The members voted to alternate the regular meetings of the coming season with either a dinner meeting, or dessert and coffee. They also accepted the suggestion that talent within the group be used, rather than outside speakers. This was the last meeting of the year.

DES MOINES

The Des Moines County Medical Auxiliary sponsored a "Senior Citizens" project during June. The Senior Citizens is a older people's club in the Burlington area that has been organized by a group of business women, and since the organizers conduct it on a volunteer basis, they need outside help whenever available. The club meets once a week at the YWCA, where the old people visit, play cards and engage in group singing or other planned entertainment. The Auxiliary's contribution, during June, consisted of furnishing and serving the refreshments and the prizes for the winners of the games. The average attendance at the meetings was 125.

The costs were borne by means of a special assessment on the members of the Auxiliary, and each doctor's wife took her turn as a member of a committee. This was the second consecutive year of the Des Moines County Medical Auxiliary's participation in this project.

GRUNDY

The Grundy County Medical Auxiliary met at the home of Mrs. H. L. Mol on Saturday, May 11, combining a short business meeting and a farewell tea for two of its members. Mrs. Lowell Peck, of Wellsburg, will make her home in Iowa City while Dr. Peck studies at SUI, and Mrs. Robert Bremer was moving to Cedar Falls, where Dr. Bremer is to practice. Mrs. Robert Meyer was welcomed as a new member. Dr. Meyer is to practice at Wellsburg.

WAPELLO

The Woman's Auxiliary to the Wapello County Medical Society met on May 7 at the Ottumwa Country Club. There were 22 members present. It was decided to give $5 to the AMEF Memorial Fund in memory of Dr. Selman, and it was also decided to make another loan available to a nursing student at St. Joseph Hospital, if one were needed. Several reports on the state convention were given, and a picnic was planned for June 9.

AMEF Note Paper and Envelopes

$1.00 for a pack of 10 each

Order from Mrs. Robert Updegraff
630 Foster Drive
Des Moines 12, Iowa

Proceeds will be donated to the American Medical Education Fund

WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

President—Mrs. J. F. Gerken, Waterloo
President-Elect—Mrs. H. C. Merillat, 2800 Woodland Avenue, Des Moines 12
Secretary—Mrs. Wm. C. Shinkle, 907-49th St., Des Moines
Treasurer—Mrs. E. A. Vorisek, 6205 Woodland Rd., Des Moines 12
Editor of THE NEWS—Mrs. E. T. Burke, 601 S.W. 42nd Street, Des Moines 12
Asst. Editor of THE NEWS—Mrs. D. F. Crowley, Jr., 663 44th Street, Des Moines 12

RECEIPTS FROM PRIVATE PATIENTS DIVIDED AMONG SUI PROFESSORS

On June 11, the State Board of Regents approved revisions in the plan, now 11 years old, by which fees collected from private patients at University Hospitals are divided among the faculty members of the College of Medicine according to rank. The system of bonuses has been designed to attract and keep high-caliber medical educators and to encourage medical research at the University.

The funds also provide financial support each year to numerous research projects in the SUI College of Medicine.

The recent board action established annual base salary minimums of $6,000, $7,000, $9,000 and $11,000 respectively for doctors holding ranks of assistant professor, associate professor, professor, and professor-and-department head. Current base salaries, in the same order, are $4,000-to-$7,000, $5,000-to-$9,000, $7,000 minimum and $8,000 minimum.

The board also increased maximums on the total amount which the University doctors may receive from a combination of these base salaries and their additional compensation from the medical service plan.

With the changes, which become effective July 1, the plan will work in this manner: Assistant professors may receive an additional 50 per cent of their base salary during the first two years in that rank, and an additional five per cent each succeeding year until the additional compensation reaches 75 per cent of the base salary, but at no time to exceed a total of $16,000, the maximum for that rank.

Associate professors may receive an additional 75 per cent of their base salary during the first four years in that rank, and an additional five per cent each succeeding year until the additional compensation reaches 100 per cent of the base salary, but at no time to exceed a total of $22,000, the maximum for that rank.

Professors and heads of departments may continue to receive an additional 100 per cent of their base salary, as they presently do, but with the total at no time to exceed $28,000 for professors and $30,000 for department heads.

Establishment of the medical service plan was precipitated by a "major exodus" of young doctors from the University staff following World War II. One of the major grievances of the teaching physicians was "insecurity among younger members of the staff both as to tenure and salary."

Today, the SUI plan is cited for its success by medical education groups throughout the nation. Medical schools find it difficult to attract top-ranking physicians with salaries ordinarily afforded by teaching institutions.

Private patients referred to the University Medical Center by private physicians are not eligible for treatment under the state's indigent medical care program, and they must pay professional medical fees for services rendered by University physicians. The fees are collected and administered by the medical services office.

CLINTON SOCIETY CELEBRATES CENTENARY

In commemoration of its 100th anniversary, the Clinton County Medical Society held a dinner meeting on June 5 at the Clinton Country Club. The guest speaker for the occasion was Dr. Marcus Bach, of the School of Religion at the State University of Iowa, who spoke on the topic "India as I Saw It." Dr. H. S. Heusinkveld was the toastmaster, and Dr. John K. Stewart, currently the president of the Society, gave the address of welcome.

Histories of the Clinton County Medical Society were read by two men, Dr. Ralph F. Luse and Dr. Wm. Walliker. Dr. Walliker related that at its founding in 1857, the first officers elected were Dr. A. B. Ireland, Camanche, president; Dr. A. P. Hudson, Lyons, vice-president; and Dr. Asa Morgan, De Witt, secretary. At the outbreak of the Civil War 13 years later, 12 out of the 16 active members of the Clinton Society answered their country's call and served with honor and distinction.

Dr. Walliker singled out several members of the Society who were active at different periods in the Society's long history and who achieved distinction by a variety of means. Dr. C. H. Lathrop was one of the signers of the group's revised Articles of Incorporation that were adopted when enough Clinton County physicians had returned from the Civil War so that meetings could once again be held. He was the author of the first medical history of the district, and in addition devised a number of appliances for the treatment of fractures and other conditions. Dr. Daniel Lathrop, in 1872, was the first delegate from the Clinton County Society to the American Medical Association.

Dr. David S. Fairchild, Sr., after practicing for several years in Ames and teaching medicine for several years in Des Moines, settled in Clinton shortly after the turn of the century. In 1911 he became the first editor of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY, a post which he held until 1929. When failing health required that he relinquish some of his responsibilities, he was continued on the JOURNAL staff as editor emeritus, and in addition was made historian of the Iowa State Medical Society.

MINUTES OF THE 1957 SESSIONS OF THE HOUSE OF DELEGATES

Iowa State Medical Society

Des Moines, Iowa—April 28-May 1, 1957

(Alphabetical Index of the Minutes Can Be Found on Page 449)

SUNDAY AFTERNOON SESSION
APRIL 28, 1957

The House of Delegates of the Iowa State Medical Society was called to order by the Speaker, Dr. Herman J. Smith, of Des Moines, at 1:00 p.m., Sunday, April 28. The House of Delegates approved the taking of attendance by signed registration cards. There were 116 delegates, 8 voting alternates, and 19 ex-officio members present.

County	*Delegate*	*Alternate*
Adair	A. J. Gantz	
Adams	C. L. Bain	
Appanoose	E. A. Larsen	
Audubon	R. L. Bartley	
Benton	J. E. Blumgren	
Black Hawk	Craig Ellyson	
	Robert Miller	
	T. L. Trunnell	
	F. G. Loomis	
Boone	R. L. Wicks	
Bremer	R. E. Shaw	
Buchanan	R. L. Knipfer	
Buena Vista	H. E. Farnsworth	
Butler	F. A. Rolfs	
Calhoun	C. R. Wilson	
Carroll	J. M. Tierney	
Cass	R. H. Moe	
Cedar	H. E. O'Neal	
Cerro Gordo	T. E. Davidson	
	Sidney Brownstone	
	J. K. MacGregor	
Clarke	C. R. Harken	
Clay	D. H. King	
Clayton	D. W. Pfeiffer	
Clinton	R. F. Luse	
	V. W. Petersen	
Crawford	A. H. Grau	
Dallas-Guthrie	W. A. Castles	
	W. A. Seidler	
Davis		J. R. Schiebe
Decatur	E. E. Gamet	
Delaware	J. E. Tyrrell	
Des Moines	F. G. Ober	
	E. P. Russell	
Dubuque	D. F. Ward	
	C. J. Schueller	
	R. J. McNamara	
Emmet	E. K. Vaubel	
Fayette	A. F. Grandinetti	
Floyd	O. H. Banton	
Franklin	R. E. Munns	
Greene		B. C. Hamilton
Grundy		H. V. Kahler
Hamilton	G. A. Paschal	
Hancock-Winnebago	D. F. Shaw	
Hardin	J. J. Shurts	
Henry		P. G. Couchman
Humboldt	J. H. Coddington	
Ida	R. E. Underriner	
Jasper	J. W. Billingsley	
Jefferson	J. W. Castell	
Johnson	G. C. Albright	
	R. H. Flocks	
	L. H. Jacques	
	W. M. Keettel	
	W. M. Kirkendall	
	J. M. Layton	
	C. E. Schrock	
	S. C. Ware	
	C. E. Radcliffe	
Jones	E. H. DeShaw	
Kossuth	Paul Warner	
Lee	L. C. Pumphrey	
		J. W. Saar
Linn	C. H. Stark	
	J. J. Keith	
	J. J. Redmond	
	John Parke	
	L. J. Halpin	
Lucas	Dean Curtis	
Madison	P. F. Chesnut	
Mahaska	G. W. Bennett	
Marion	D. A. Mater	
Marshall	D. D. Harris	
Mills	M. L. Scheffel	
Monona	E. E. Gingles	
Montgomery	Oscar Alden	
Muscatine	K. E. Wilcox	
Osceola	F. B. O'Leary	
Page	S. T. Ramsdell	
Plymouth	F. D. Christensen	
Pocahontas	J. B. Thielen	
Polk	D. F. Crowley, Jr.	
	R. A. Dorner	
	N. W. Irving	
	T. A. Bond	
		E. T. Scales
	F. M. Burgeson	
	J. T. McMillan	
	B. M. Merkel	
	C. C. Woodburn, Jr.	
	M. E. Alberts	
	C. W. Losh, Jr.	
	R. B. Stickler	
	D. C. Wirtz	
Pottawattamie		H. W. Mathiasen
	C. V. Edwards	
Poweshiek	E. S. Korfmacher	
Ringgold	D. E. Mitchell	
Sac	J. W. Gauger	
Scott	A. B. Hendricks	
	P. E. Gibson	
	J. H. Sunderbruch	
	J. F. Bishop	
Sioux	M. O. Larson	
Story	G. E. McFarland, Jr.	
	G. E. Montgomery	
Tama	C. W. Maplethorpe, Sr.	
Taylor	R. W. Boulden	
Union	H. J. Peggs	
Van Buren	L. A. Coffin	
Wapello	P. D. McIntosh	
	K. E. Lister	
Warren	C. A. Trueblood	
Wayne	C. N. Hyatt	
Webster	C. J. Baker	
	H. H. Allen	
Winneshiek	E. F. Hagen	
Woodbury	A. Q. Johnson	
	R. C. Mugan	
	P. D. Knott	
	P. L. Bettler	
		J. E. Reeder, Jr.
Wright	G. E. Schnug	

OFFICERS PRESENT AS EX-OFFICIO MEMBERS OF THE HOUSE

W. L. Downing	P. W. Brecher
Fred Sternagel	B. F. Howar
W. M. Sproul	S. D. Porter
R. F. Birge	E. F. Van Epps
N. B. Anderson	G. S. Atkinson
H. J. Smith	C. H. Flynn
G. H. Scanlon	R. N. Larimer
W. D. Abbott	F. C. Coleman
A. F. Fritchen	T. D. Throckmorton
J. E. Houlahan	

Minutes of the April 25, 1956, meeting of the House of Delegates were approved as published in the July, 1956, JOURNAL OF THE IOWA STATE MEDICAL SOCIETY. The

Speaker outlined procedures to be followed in conducting the business of the House of Delegates and announced the appointment of reference committees, stating that the Reference Committee on Insurance and Medical Service would meet at 7:00 p.m. Sunday evening, the remainder to convene at 8:30 a.m., Monday, April 29.

Reports as published in the 1957 HAND BOOK FOR THE HOUSE OF DELEGATES were approved.

Reports of Officers

FROM THE OFFICE OF THE SECRETARY

Factual data only is contained in this report on American Medical Association and Iowa State Medical Society memberships.

ISMS MEMBERSHIPS

Memberships in the Iowa State Medical Society during 1956 reached a total of 2515, as compared with 2504 in 1955. Sixty-three counties had 100 per cent membership in the ISMS, as compared with 62 in 1955. During 1956 there were 68 eligible non-members, whereas in 1955 there were 71; and the number of ineligible doctors remained at the same figure, 51, for the year 1956. There were 105 physicians retired or not in practice as against 97 in 1955. The total membership percentage in 1956 was 97 per cent, the same percentage as in 1955.

COUNTY SOCIETIES HAVING 100 PER CENT MEMBERSHIP IN ISMS 1956

Adams	Fayette	Lee	Sac
Audubon	Floyd	Lucas	Scott
Boone	Franklin	Lyon	Shelby
Bremer	Greene	Madison	Story
Buena Vista	Grundy	Mahaska	Tama
Butler	Hamilton	Marshall	Taylor
Calhoun	Hardin	Monroe	Union
Cerro Gordo	Harrison	Montgomery	Van Buren
Cherokee	Henry	Muscatine	Warren
Chickasaw	Howard	Osceola	Wayne
Clarke	Humboldt	Page	Webster
Clay	Ida	Plymouth	Winneshiek
Dallas-Guthrie	Iowa	Pocahontas	Woodbury
	Jackson	Polk	Wright
Davis	Jasper	Pottawattamie	
Delaware	Keokuk		
Dickinson	Kossuth	Ringgold	

1956 ISMS MEMBERSHIP RECORD

County	Members	Eligible Non-Members	Ineligible Non-Members	Not in Practice or Retired	Percentage
Adair	3	3	..	..	50
Adams	4	..	..	..	100
Allamakee	7	1	..	1	88
Appanoose	13	3	..	..	81
Audubon	6	..	..	1	100
Benton	16	2	..	..	89
Black Hawk	110	2	..	..	98
Boone	21	..	..	..	100
Bremer	17	..	..	..	100
Buchanan	9	2	10	..	82
Buena Vista	15	..	2	..	100
Butler	11	..	..	..	100
Calhoun	16	..	..	1	100
Carroll	25	1	..	..	96
Cass	13	1	1	..	94
Cedar	7	1	..	..	88
Cerro Gordo	65	..	..	1	100
Cherokee	17	..	2	1	100
Chickasaw	12	..	..	..	100
Clarke	6	..	..	..	100
Clay	12	..	..	..	100
Clayton	13	2	..	2	87
Clinton	51	2	3	..	96
Crawford	10	1	..	2	91
Dallas-Guthrie	31	..	4	..	100
Davis	13	..	..	..	100
Decatur	5	1	..	1	83
Delaware	11	..	1	1	100
Des Moines	43	1	1	1	98
Dickinson	9	..	..	..	100
Dubuque	71	7	..	2	91
Emmet	12	1	..	..	92
Fayette	22	..	..	4	100
Floyd	17	..	..	1	100
Franklin	10	..	..	..	100
Fremont	6	2	..	1	75
Greene	17	..	..	1	100
Grundy	14	..	..	..	100
Hamilton	13	..	1	..	100
Hancock-Winnebago	16	1	..	3	94
Hardin	24	..	..	2	100
Harrison	8	..	..	3	100
Henry	14	..	7	..	100
Howard	7	..	..	..	100
Humboldt	10	..	..	1	100
Ida	5	..	..	2	100
Iowa	13	..	..	1	100
Jackson	14	..	..	..	100
Jasper	19	..	..	3	100
Jefferson	11	1	..	1	92
Johnson	214	4	..	5	98
Jones	15	1	..	..	94
Keokuk	8	..	1	3	100
Kossuth	15	..	2	2	100
Lee	40	..	..	..	100
Linn	125	3	..	4	98
Louisa	5	2	..	..	72
Lucas	8	..	..	..	100
Lyon	5	..	..	..	100
Madison	7	..	..	..	100
Mahaska	20	..	..	1	100
Marion	17	7	..	..	71
Marshall	37	..	..	..	100
Mills	6	1	1	..	86
Mitchell	11	3	..	2	79
Monona	12	1	..	1	92
Monroe	7	..	..	..	100
Montgomery	16	..	..	..	100
Muscatine	20	..	2	..	100
O'Brien	16	1	..	1	94
Osceola	6	..	..	..	100
Page	23	..	5	..	100
Palo Alto	13	2	..	..	87
Plymouth	11	..	..	4	100
Pocahontas	10	..	1	1	100
Polk	325	..	2	14	100
Pottawattamie	70	..	2	4	100
Poweshiek	13	2	..	..	87
Ringgold	5	..	..	..	100
Sac	10	..	..	..	100
Scott	108	..	1	7	100
Shelby	7	..	..	1	100
Sioux	11	1	..	..	92
Story	44	..	..	1	100
Tama	13	..	..	..	100
Taylor	3	..	..	..	100
Union	15	..	..	..	100
Van Buren	5	..	..	..	100
Wapello	54	1	..	1	98
Warren	9	..	..	2	100
Washington	16	1	..	1	94
Wayne	7	..	..	..	100
Webster	54	..	..	2	100
Winneshiek	9	..	..	2	100
Woodbury	130	..	2	6	100
Worth	4	1	..	..	80
Wright	23	..	..	3	100
Totals	2,515	68	51	105	97

AMA MEMBERSHIPS

In 1956, 2480 members of the Iowa State Medical Society were members of the American Medical Association. Of this number 14 were associate members which gave us an active AMA membership of 2466 during the year entitling us to three AMA delegates. Thus, our AMA membership increased to 98 per cent of the total Iowa State Medical Society membership.

R. F. Birge, M.D., *Secretary*

REPORT OF THE TREASURER

The fact that the Iowa State Medical Society has completed another extremely active year is reflected in the following financial statement. It is interesting to note that practically all phases of Society activities are steadily increasing. The various committees of the Society have started new projects, and the resultant increased demands on the central office are apparent in the general operating expenditures. Actually, the income and expenditures for the past two years are quite similar. However, we were able to complete 1956 in a better financial state chiefly because of the generous contributions of many physicians throughout the nation, the majority of whom were pathologists and radiologists.

The Society's 1956 Baldridge-Beye contribution to the American Medical Education Foundation amounted to $2,717, and again this payment was earmarked for the State University of Iowa College of Medicine. The payment was based on the assignment of $1.00 for each 1956 dues paying member (2117) plus $600 returned to the Fund early in the year when a physician paid off his Baldridge-Beye loan.

ASSETS

Current Assets:		
Cash in Banks	$31,045.44	
Government Bonds	40,422.50	
Notes Receivable—		
Baldridge-Beye Fund	3,778.00	
North Central Dist. Blood Bank Clearing House	500.00	
Pension Insurance due from Employees	342.54	
Total Current Assets		$ 76,088.48
Fixed Assets:		
Land	$ 5,000.00	
Building	40,230.69	
Office Furniture and Fixtures	15,209.18	
Total	$60,439.87	
Less: Depreciation to Date	13,796.13	
Net Fixed Assets		$ 46,643.74
TOTAL ASSETS		$122,732.22

LIABILITIES AND NET WORTH

Liabilities:		
Local Taxes	$ 1,200.00	
TOTAL LIABILITIES		$ 1,200.00
Baldridge-Beye Memorial Fund:		
Balance 1-1-56	$ 4,378.00	
Add: Income 1956	2,117.00	
Total	$ 6,495.00	
Less: Payment to American Medical Education Foundation	2,717.00	
Net Baldridge-Beye Fund		$ 3,778.00
Net Worth:		
Balance 1-1-56	$91,355.94	
Add: Net Income 1956	26,398.28	
Balance, Period ending 12-31-56		$117,754.22
TOTAL LIABILITIES AND NET WORTH 12-31-56		$122,732.22

CASH RECEIPTS FOR THE YEAR 1956

Dues—State Society	$157,631.25
Dues—AMA	$ 50,172.50
ISMS Educational Fund	21,115.00
Journal Advertising	23,499.44
Journal Reprints	1,939.29
Annual Session	14,705.42
Contributions	54,812.00
Miscellaneous	389.85
AMA Collection Commission	507.13
Interest—Government Bonds	853.85
Interest—Notes Receivable	50.00
Interest—Savings Accounts	278.62
TOTAL RECEIPTS	$325,954.35

EXPENDITURES FOR THE YEAR 1956

Annual Session	$ 15,172.20
Baldridge-Beye Memorial Fund	2,117.00
Committee Expense:	
Grievance	1,534.72
Legislative	16,771.08
Medical Education and Hospitals	27.70
Medical Service	2,569.69
Medico-Legal	..
Public Health	2,212.52
Public Relations	12,699.71
Other Committees	5,936.23
Council Expense	1,388.41
County Society Services	942.01
Depreciation—Building	1,012.82
Depreciation—Office Furniture and Fixtures	1,694.00
Discount on Bonds	450.00
Dues to AMA	50,197.50
Dues and Subscriptions	680.50
General Administrative Expense	1,046.08
Insurance	1,099.05
ISMS Educational Fund	21,115.00
Janitor Supplies	69.80
Journal—Printing and Engraving	28,295.70
Journal—Reprints	1,843.66
Legal Expense	8,988.25
Light, Gas and Water	1,084.70
Local Taxes	1,200.00
Office Stationery and Supplies	3,638.74
Pension Insurance	698.13
Postage	2,714.76
Repairs and Maintenance of Office Equipment and Building	295.21
Salaries	55,370.31
Salaries—Outside Secretarial	100.38
Service Contracts—Machines	403.17

Social Security	949.57
Special Public Relations	39,932.45
Telephone and Telegraph	3,823.07
Travel—Officer	5,227.91
Travel—Salaried Employee	4,582.17
Trustee Expense	776.70
Unemployment Tax—Federal	114.92
Unemployment Tax—State	86.19
Use Tax	694.06
TOTAL EXPENDITURES	$299,556.07
Net Income	$ 26,398.28

N. BOYD ANDERSON, M.D., *Treasurer*

REPORT OF THE BOARD OF TRUSTEES

The 1956-57 year has been one that will be remembered as one of the most important in the history of the Iowa State Medical Society. A long and bitter controversy between doctors and hospitals came to an end. Although it was expensive and tremendously time-consuming, the results have justified the money and effort. Iowa physicians now have, for the first time, a legal understanding of what constitutes proper doctor-hospital relations, and the Iowa settlement will unquestionably pave the way for other states to develop similar arrangements.

In dollars and cents, this problem cost the doctors and hospitals many thousands. Society expenses incurred in connection with this controversy totaled approximately $150,000, of which $50,000 was contributed by individual physicians, the bulk coming from pathologists and radiologists in Iowa and the nation. Fortunately, the Society was able, with this outside help, to finish the year 1956 in the black, and was able to add $10,000 to its bond reserve.

It is the hope of the Board of Trustees that at the close of 1957 an additional $10,000 or possibly $20,000 can be invested in bonds so as to reestablish the Society's bond reserve at a level consistent with good business practices and bring the bond reserve back to the $60,000 that it was maintaining prior to the physician-hospital controversy. The Board feels that that amount is a bare minimum reserve to provide protection for the financial solvency of the Society in the event of an emergency. Last year, we experienced such an emergency when it became necessary for the Society to join the State Department of Health and Commissioner Zimmerer in defense of a law suit brought by the chiropractors in an effort to secure for themselves the rights and privileges of physicians.

Taking these factors into account, the Board of Trustees, on authority of the House of Delegates, has set the 1957 dues at $75 plus $10 for the Educational Loan Fund of the ISMS.

THE HOUSE OF DELEGATES HANDBOOK, although not complete, reports much of the work that has been done by the Society during the past year. If you will take time to peruse the reports that it contains and to listen to the supplemental reports that are presented orally before the House of Delegates in April, we believe that you will think, as we do, that the Iowa State Medical Society is one of the most active, efficient, well-organized societies in the country. The Iowa State Medical Society is engaged in big business, and your Board of Trustees cannot see how the situation can be altered if the Society is to serve the best interests of the doctors of Iowa.

The Board of Trustees is proud of the progress that has been made by the Society in its relationships with other state organizations and the prestige that it now enjoys with the AMA. It feels that the members of the Society have waited patiently for the development of just such an organization as the Society has become.

Further, it believes that if the Society is to fulfill its obligation to the people of Iowa and to its member doctors, it should be maintained as it is and, indeed, expanded if and when circumstances make expansion necessary. The officers of the Society are as dollar-conscious as are any of its members, and all factors are taken into account when the Society dues are set. Every effort is made to establish dues that are realistic and in keeping with the maintenance of a Society capable of providing leadership for the doctors of Iowa.

As you read this HANDBOOK, the Board respectfully suggests that you give special attention to the financial statement that it contains. A supplemental report from the Board will be presented to the House of Delegates at its meeting next month.

Report of the Council

FIRST DISTRICT

For the county medical societies in the First Councilor District, 1956 was a rather quiet year. The Winneshiek County Medical Society held only one meeting of its own, but matters of county interest were taken up at meetings of the hospital staff. The fact that there are only nine members—though those nine are all of the doctors of medicine in the county—makes it uneconomical to hold frequent scientific sessions, and it hasn't been possible to hold multi-county meetings. Dr. Felix A. Hennessey, of Calmar, a past-president of the Iowa State Medical Society, is being proposed for Life Membership this year.

The Mitchell County Medical Society held 10 monthly meetings during 1956, and sponsored a free polio vaccination clinic in December. The Fayette County Society held a similar number of meetings, and at most of them it presented scientific programs that attracted doctors from both Fayette and the surrounding counties. Dr. Elizabeth S. Kennedy, of Oelwein, the unsuccessful candidate for General Practitioner of 1956, is to be renominated for that honor this year, by the unanimous vote of the Fayette Society.

A. F. FRITCHEN, M.D., *Councilor.*

Deputy Councilors:

Allamakee
F. R. SPARKS, M.D., Bremer
M. J. MCGRANE, M.D., Chickasaw
P. R. V. HOMMEL, M.D., Clayton
A. F. GRANDINETTI, M.D., Fayette
E. V. AYERS, M.D., Floyd
P. A. NIERLING, M.D., Howard
T. E. BLONG, M.D., Mitchell
E. F. HAGEN, M.D., Winneshiek

SECOND DISTRICT

At Mason City during September, a special meeting was held for the physicians and their wives of the Second Councilor District, and the so-called hospital-doctor controversy was discussed. The candidates for office and their wives were invited, and some doctors from adjacent counties of the First Councilor District attended.

The Cerro Gordo County Medical Society continued its excellent series of programs, and they were well attended by physicians from neighboring counties.

All of the counties in the Second District carried out preschool examinations and polio inoculation schedules. All report that the polio program has lagged because of public apathy. All of the counties participated in crippled children's clinics that were held at Charles City, Forest City and Mason City. Many of the counties carried on tuberculosis surveys.

Several county societies reported having made arrangements for a physician to be present at athletic contests. This is commendable.

Cerro Gordo County had an outbreak of Coxsackie virus disease in July and August, and a team from the U. S. Public Health Service came in to study it. In December, it was reported that this was the most thoroughly documented outbreak thus far studied, and that much valuable information on it will be released soon.

Jay E. Houlahan, M.D., *Councilor.*

Deputy Councilors:

Frank F. McKean, M.D., Butler
H. G. Marinos, M.D., Cerro Gordo
W. L. Randall, M.D., Franklin
T. J. Irish, M.D., Hancock-Winnebago
I. T. Schultz, M.D., Humboldt
M. G. Bourne, M.D., Kossuth
Charles Bergen, M.D., Worth
S. P. Leinbach, M.D., Wright

THIRD DISTRICT

Physicians in the Third Councilor District of the Iowa State Medical Society were deeply grieved at the death of Dr. Thomas L. Ward, of Arnolds Park, our district councilor. His unselfish giving of both his time and energies to his patients and the Medical Society will long be remembered.

Doctors in this area have been active in the many fields that touch upon their practices and upon the welfare of their communities, including the fields of public relations, legislation and local health programs. In July, two legislative meetings were held, one in Sheldon for the western portion of the district, and one in Spencer for the eastern area. These were dinner meetings, to which the doctors' wives, and all of the political candidates and their wives were invited. Officers of the State Society and members of the State Society staff were present to speak on current problems, including the doctor-hospital controversy. Attendance was almost 100 per cent.

In August, a summer meeting of the Upper Des Moines Medical Society was held on Pocahontas Point, at Lake Okoboji. A scientific program was arranged by Drs. John L. Powers, Estherville, Ruth Wolcott, Spirit Lake, and Dean King, Spencer. The speakers were Drs. John D. Lutton, Sioux City, Laurence J. Halpin, Cedar Rapids, and Raymond J. Jackman, Mayo Clinic. The wives of the doctors attending were guests at dinner. The meeting was well attended.

In September, a combined legislative and public relations dinner meeting was held in Spencer, with State Society officers and staff members meeting with the public relations and legislative contact men of the counties. Attendance was 95 per cent complete, and individual reports showed alertness and activity in all counties.

Members have participated in the Preceptor Program and found it to be of mutual benefit to doctors and medical students.

Lyon, Sioux, Osceola and O'Brien Counties make up the Northwest Iowa Medical Society and have four scientific meetings during the year. Those programs are well attended.

The Clay County Medical Society meets monthly, considers state and county problems and formulates programs accordingly. Scientific papers, case reports and films are arranged by the program committee. County immunization programs are carried out in the schools, with the assistance of the school and county public health nurses. Members cooperated in presenting two clinics for crippled children. Representatives attended all state meetings. The Woman's Auxiliary has 100 per cent membership, sponsors a very active Future Nurses Club, works on all community health programs and maintains a booth in the health building at the Clay County Fair. All of the Auxiliary's activities are heartily endorsed by the Society and are financed by it.

The Dickinson County Medical Society had three business meetings during the year, at which current questions were considered and several scientific films were shown. The Society entertained the staff of the crippled children's clinic at dinner, and this contact with the doctors and technicians from Iowa City was considered most profitable. The Society has cooperated in two public health vaccination programs. There are too few wives for an organized Auxiliary, but all of them are members-at-large of the State Auxiliary and contribute to state programs.

Emmet County Medical Society operates through the hospital staff. Meetings are held monthly. The programs are scientific, and the officers are the same for the two organizations. Dr. Ray Turner has returned to his practice in Armstrong after two years in the Army. Dr. Hugo A. Lindholm has entered practice with Dr. Clair Lindholm after completing a three-year residency in surgery at Northwestern Hospital, in Minneapolis. There is an organized Auxiliary, which meets on the same evenings and serves refreshments at the medical society-hospital staff meetings.

The Lyon County Medical Society's membership remains unchanged. Its annual meeting for the election of officers was held on December 2, 1956. There is an organized Auxiliary in Lyon County, and it sponsors the program on nursing at Career Day in the local schools.

The O'Brien County Medical Society was host to the Northwest Iowa Medical Society at Sheldon on March 19. Dr. Hugh LaMaster has moved from Primghar to Belle Fourche, South Dakota; Dr. A. D. Smith, formerly associated with Drs. J. P. Clark and G. B. Johnson, at Estherville, began practice with Dr. E. B. Getty on January 14; and Dr. J. R. Simmons, who formerly

practiced in Hospers, Nebraska, practiced in Paullina from May until August, 1956, and left to practice in Fremont, Nebraska. An Auxiliary was organized in 1956, but is not as yet particularly active.

The Osceola County Medical Society's membership remains the same. It has an organized Auxiliary that is active in carrying on local and state projects.

The Pocahontas County Medical Society was active throughout the year in aiding in T-B work, physical examinations of 4-H club members and the polio vaccination program. Its ten meetings last year were 100 per cent attended. There are no new members. Dr. Charles L. Jones, of Gilmore City, became a Life Member in 1956, having practiced 51 years, 47 of them in Gilmore City. The Society is small, but very active in local and State Society affairs, having from one to three members on State Society committees. There is no organized Auxiliary, but some of the doctors' wives are members-at-large. Mrs. James Gannon, of Laurens, is Third District Councilor for the State Auxiliary, and Laurens has a Future Nurses Club sponsored by the Auxiliary.

The Sioux County Medical Society meets during the year for required elections and for the consideration of business matters and policies. The latest meeting considered a vaccination program for the schools. There is an Auxiliary, and it sponsors a program each year for girls interested in nursing.

The Palo Alto County Medical Society has a new prospective member in Graettinger, Dr. Robert Dawson. The Auxiliary is active in community health programs and supports the State Auxiliary.

The doctors' wives of this district have been of considerable help to us this year in the fields of public relations and legislation, and they continue to increase the tempo of their activities in community and state welfare and health programs. Clay County has three women active in State Auxiliary work: Mrs. E. E. Munger, BULLETIN chairman; Mrs. Frank Edington, TODAY'S HEALTH chairman; and Mrs. Dean King, president. From the other counties in the Third District, there are Mrs. I. E. Brown, O'Brien, courtesy and Doctor's Day chairman; Mrs. M. O. Larson, Sioux, memorial service chairman; and Mrs. Lester Hegg, Sioux, member of the National Auxiliary nominating committee.

I feel that the doctors of the Third District have been active and alert, and there are five of them who are members of State Society committees.

DEAN H. KING, M.D., *Councilor.*

Deputy Councilors:

C. C. JONES, M.D., Clay
R. F. WOLCOTT, M.D., Dickinson
E. K. VAUBLE, M.D., Emmet
STUART COOK, M.D., Lyon
E. B. GETTY, M.D., O'Brien
F. M. RIZZO, M.D., Osceola
H. L. BRERETON, M.D., Palo Alto
C. L. JONES. M.D., Pocahontas
M. O. LARSON, M.D., Sioux

FOURTH DISTRICT

The Fourth Councilor District had a rather quiet and uneventful year in 1956. There was one District meeting held in Sioux City to discuss general problems of the State Society.

Most of the nine counties now have monthly dinner meetings, and they are well attended.

Crawford and Buena Vista Counties each held a summer golf, dinner and scientific meeting, with guest speakers. Cherokee County held one invitational afternoon-dinner-evening meeting.

Dr. R. C. Riehle left Denison for a residency at Iowa Methodist Hospital, Des Moines. Dr. J. J. Gleason returned from military service to his practice at Vail. Dr. John McFarlane opened a practice at Sioux City. There were no other changes in the District.

The Woman's Auxiliary has active chapters in about one-fourth of the counties, and members-at-large in the others.

Four counties have developed guiding fee schedules for their respective memberships.

PAUL W. BRECHER, M. D., *Councilor.*

Deputy Councilors:

T. E. SHEA, M.D., Buena Vista
JAMES M. TIERNEY, M.D., Carroll
D. E. KOSER, M.D., Cherokee
R. M. JOHNSON, M.D., Crawford
R. E. UNDERRINER, M.D., Ida
H. L. GANZHORN, M.D., Monona
H. L. VANDERSTOEP, M.D., Plymouth
DON MICHAELSON, M.D., Sac
D. B. BLUME, M.D., Woodbury

FIFTH DISTRICT

The physicians of the Fifth Councilor District, approximately 460 in number, have been active in the work of organized medicine in all of its echelons during the past year. Fifth District doctors are to be found in positions of responsibility in the ISMS and in the AMA. Each of the nine county societies has regular meetings which deal with both scientific aspects of medical progress and with the ever more important politico-economic and public relations aspects of practice.

Stimulated by the physician-hospital controversy, substantial progress has been made in forging a potent political weapon. Two dinner meetings, attended by doctors from throughout the District, were directed toward informing the candidates for the Legislature regarding the views of physicians and of their organization. Those meetings were eminently successful in creating a harmonious relationship which will be valuable during the present legislative session.

The county societies of the District, since the last State Meeting, have evinced acute interest in the development of a broader coverage by Blue Shield. There is wide divergence of opinion, ranging from "Stay as we are" to advocacy of a complete-coverage program, with deductible and/or co-insurance features. Heat has been generated in some areas. The encouraging thing about this situation is the awakening of doctors to the problems that confront them in the field of prepayment for medical care. Development of the Iowa Relative Value Schedule is receiving commendation as a step toward removing inequities in the present Blue Shield fee schedules.

This District is pleased to report that seven of its nine counties have active Woman's Auxiliaries. These organizations are performing worthwhile service in the fields of civic affairs and public relations. It is of particular interest to note the success of the Auxil-

iary's nurse recruitment program and the rapid expansion of its loan fund for student nurses.

I wish to express my sincere appreciation to the deputy councilors of the District for their valuable assistance and cooperation.

Bruce F. Howar, M.D., *Councilor.*

Deputy Councilors:

Ralph L. Wicks, M.D., Boone
Glenn S. Rost, M.D., Calhoun
Allan G. Felter, M.D., Dallas
Elvin D. Thompson, M.D., Greene
William A. Seidler, M.D., Guthrie
William B. McGahey, M.D., Hamilton
Maurice T. Bates, M.D., Polk
John D. Conner, M.D., Story
Charles Baker, M.D., Webster

SIXTH DISTRICT

Physicians in the Sixth Councilor District have been very cooperative and active in the work of their county medical societies as well as in fulfilling their civic and social responsibilities. Two meetings were held in the District during 1956 at which the candidates for the Legislature and their wives were guests. On those occasions, an effort was made to acquaint them with some of the problems of the medical profession.

The Black Hawk County Medical Society has stressed the importance of public relations by having a series of three public forums, presented in cooperation with the WATERLOO DAILY COURIER. They were very well received.

The county societies held several scientific sessions, either as regular meetings or in conjunction with hospital staff meetings. Their cooperation in the immunization campaigns was commendable.

Fine modern additions have been completed and are in use at Skiff Memorial Hospital, in Newton, and at the Allen Memorial Hospital, in Waterloo.

Mercy Hospital, at Marshalltown, is formulating plans for an addition of about 60 beds.

The subject of mental health has received considerable attention at the various county meetings, and Mercy Hospital, Marshalltown, has offered accommodations for a mental health center. Physicians must be ever mindful of their responsibility in helping direct this important work.

The Woman's Auxiliary should be congratulated for its many activities in the various counties. In the smaller counties in which there are no organized groups, the doctors' wives help and support their respective hospital auxiliaries.

I want to express my sincere appreciation to the deputy councilors of the District for their continued cooperation and valued assistance.

S. D. Porter, M.D., *Councilor.*

Deputy Councilors:

N. C. Knosp, M.D., Benton
C. D. Ellyson, M.D., Black Hawk
E. A. Reedholm, M.D., Grundy
L. F. Parker, M.D., Hardin
C. F. Watts, M.D., Iowa
J. W. Ferguson, M.D., Jasper
R. C. Carpenter, M.D., Marshall
T. V. Niemann, M.D., Poweshiek
A. J. Havlik, M.D., Tama

SEVENTH DISTRICT

The Councilor for the Seventh District wishes first to take this opportunity publicly to thank the men who have served so faithfully as deputy councilors. Their assistance, counsel and ideas have been most helpful. These men served as transmitters, to and fro, for the state and county societies on all matters that concerned them and their constituents. They are the workers without whom no organization, large or small, can survive or progress. Affairs of the Society, like affairs of the nation, are not static. Problems for discussion continue to arise and must be resolved along traditional lines. The patient *and the physician* must be taken into consideration.

Now that the physician-hospital controversy has been settled, the physicians of this District who actively participated in the discussions are turning their thoughts and energies to other problems. Some of them are the Iowa Relative Value Schedule, Medicare, Blue Shield contracts, Salk polio vaccine programs, mental health, rural health and agricultural medicine, and public relations. All of the county societies have continued their local and civic activities, which do so much to indicate that the good physician is also a good citizen. As I have said in previous reports, those societies which have Auxiliaries have one of the best public relations weapons that organized medicine can have. Many Auxiliaries are very active in promoting what is best for Iowa Medicine in general.

Continued interest and discussion of the affairs, activities and proposals of the ISMS should be the goal for all of us. Your voice is the voice of the Society. Use it!

Eugene F. VanEpps, M.D., *Councilor.*

Deputy Councilors:

D. F. Ward, M.D., Dubuque
H. J. Jones, M.D., Linn
P. J. Leehey, M.D., Buchanan
V. W. Peterson, M.D., Clinton
R. E. Clark, M.D., Delaware
T. M. Redmond, M.D., Jones
H. E. O'Neal, M.D., Cedar
L. H. Jacques, M.D., Johnson
O. L. Frank, M.D., Jackson

EIGHTH DISTRICT

The physicians of the Eighth Councilor District have been very active in their efforts to improve the public relations of organized medicine. Indeed, that is perhaps their most important function at this time, so far as Society work is concerned.

All county medical societies have regular scientific meetings, and most of them hold such meetings monthly. The programs are on a high scientific level, and there usually is a guest speaker. In several counties the medical society and hospital staff meetings are held simultaneously.

The special activities of each county have been outstanding. Washington County has cooperated with the Iowa Heart Association during the past year in conducting a survey of the problems of the cardiac farmer. The results have been encouraging.

Scott County Medical Society had a centennial celebration highlighted by an address by Dr. Elmer Hess, president of the AMA. The Scott County Society also

instituted a blood insurance program called "the family plan." Some 5,600 families were enrolled, each promising one donor who would give a pint of blood on call every two years. In return, all members of the family are assured all the blood they may require at any time. There is a minimal processing fee for each pint of blood used.

Muscatine County is no longer a trouble spot. Public relations are on a high level, especially as regards the newspapers and radio stations. There is no longer a conflict between the hospitals, and there is no osteopathic problem.

Meetings were held at Davenport and at Burlington for discussions of the physician-hospital controversy. Both were well attended, and much discussion was stimulated. The overall support of member doctors in this controversy was evidenced financially as well as verbally, for there was a nearly 100 per cent response to the special assessment.

All of the deputy councilors in this District are to be complimented for their interest and for their help in disseminating information to their constituents.

J. H. SUNDERBRUCH, M.D., *Councilor.*

Deputy Councilors:

J. F. FOSS, M.D., Des Moines
W. H. MEGORDEN, M.D., Henry
J. W. CASTELL, M.D., Jefferson
G. H. ASHLINE, M.D., Lee
R. L. FEIGHTNER, M.D., Lee
L. E. WEBER, M.D., Louisa
K. E. WILCOX, M.D., Muscatine
T. W. MCMEANS, M.D., Scott
KIYOSHI FURUMOTO, M.D., Van Buren
G. E. MONTGOMERY, M.D., Washington

NINTH DISTRICT

The Appanoose County Medical Society held 12 regular monthly meetings during 1956. A scientific paper was given by a member at each one.

The school health program has been good. In the high school, all freshmen, new students and athletes are given complete physical examinations. Ninety-eight per cent of pre-school children had complete examinations in doctors' offices before entering kindergarten.

The Crippled Children's Clinic, held in November last year, seems to be gaining in popularity and doctor participation. Plans have been completed for a survey of all farm accidents in the County in conjunction with the ISMS Subcommittee on Rural Health.

Dr. C. H. Mitchell, of Cincinnati, who has now been a member of the State Society for 50 years, has been nominated for Life Membership.

The Davis County Medical Society held regular meetings throughout 1956. Among that group's activities for the year were the following: (1) physical examinations for the Bloomfield High School football squad; (2) annual examinations for 4-H Club girls; (3) Boy Scout physicals; (4) Bloomfield pre-school exams; and (5) tuberculin patch tests given to all Davis County school children in cooperation with the T-B and Health Association.

The Keokuk County Medical Society had its annual meeting in January, 1956. Activities for the year included participation in the free Salk vaccination program.

The Lucas County Medical Society held one meeting each month during 1956.

The Mahaska County Medical Society observed its centennial during 1956, and has maintained an active and progressive program throughout the year. All doctors in the county are members of the Society. Nine regular meetings were held; at five of them there were scientific programs with guest speakers; and two of the meetings attracted physicians from nearby counties. Special activities included arrangements for cooperating with the SUI eye bank, examinations for all school athletes and cooperation with the State Services for Handicapped Children.

The outstanding Mahaska County meeting of the year was the Centennial Banquet, which was attended by all doctors and their wives. The speakers were Dr. Walter Bierring and Dr. Fred Sternagel. During the preceding week, a poster contest for portrayals of early medicine had been sponsored by the Society in the schools. The Woman's Auxiliary, which has been very active throughout the year, was of great assistance in the preparations for the banquet.

The Marion County Medical Society held joint meetings during 1956 with the staff of the U. S. Veterans Administration Hospital in Knoxville.

The Monroe County Medical Society cooperated in the county-wide school T-B patch test program, and advised in the planning of an addition to the Monroe County Hospital. The capacity of the institution will be 45 beds when the enlargement is completed, in 1957.

The Wayne County Medical Society held nine regular monthly meetings, five of which were scientific. One member of the Society was lost by death.

GEORGE S. ATKINSON, M.D., *Councilor.*

Deputy Councilors:

E. F. RITTER, M.D., Appanoose
H. J. GILFILLAN, M.D., Davis
R. G. GILLETT, M.D., Keokuk
A. L. YOCUM, M.D., Lucas
R. L. ALBERTI, M.D., Mahaska
H. L. BRIDGEMAN, M.D., Marion
D. N. ORELUP, M.D., Monroe
P. D. MCINTOSH, M.D., Wapello
D. R. INGRAHAM, M.D., Wayne

TENTH DISTRICT

Nearly all of the county medical societies in the Tenth Councilor District hold their meetings in conjunction with county or local hospital staff meetings, and for the most part these are monthly.

Attendance throughout the area has always been high. The Southwestern Iowa Medical Society, which for the purposes of scientific meetings is a combination of the county societies in the Tenth Councilor District, has continued to hold bi-monthly sessions, with relatively good attendance. Speakers have been brought from Des Moines, from the University of Nebraska and from SUI. At the most recent meeting, Upjohn's "Grand Rounds" was shown. That program was seen nowhere else in Iowa.

Two meetings were held in the District concerning the physician-hospital controversy, both with good attendance. The latter of them was in October, at which time the wives of the doctors and the candidates for the Legislature were invited. We are happy to report that over half of the candidates of both parties

were present at that meeting, and that we had exceedingly fine cooperation from hard-working ISMS members from outside the District. The discussion period was fruitful as well as enjoyable, and we feel that the doctors made many friends among the legislators. We are certain that we brought to many of those men some direct, first-hand information that they had not had prior to the meeting.

The Union County Medical Society started a weekly radio program over Station KSIB as a good-will effort for the region. This is a live program in which two doctors discuss various segments of medicine that listeners have inquired about. Over the last three months, the program has been largely under the direction of the Medical Society, for it has chosen the subjects to be discussed. Listener interest has been exceedingly high, and many of the participants have been stopped and thanked personally for their public service effort.

Anyone wishing to know more about these programs is welcome to ask for information, and the Union County Society has tape recordings of several of the dialogues that it will be glad to lend to interested physicians.

All in all, the activity throughout the area has been considerable throughout this past year. The cooperation from the local societies, the deputy councilors and other members has been exceedingly gratifying, and the councilor wishes to extend his appreciation to them.

H. J. Peggs, M.D., *Councilor.*

Deputy Councilors:

A. S. Bowers, M.D., Adair
J. C. Nolan, M.D., Adams
G. I. Armitage, M.D., Clarke
E. E. Gamet, M.D., Decatur
J. E. Evans, M.D., Madison
E. J. Watson, M.D., Ringgold
R. W. Boulden, M.D., Taylor
H. J. Peggs, M.D., Union
C. A. Trueblood, M.D., Warren

ELEVENTH DISTRICT

Cass, Pottawattamie, Page and Montgomery County Medical Societies all had monthly meetings during 1956, with the exception of a summer break for Page and Pottawattamie Counties. There were scientific programs at all of the meetings for Cass, Page and Pottawattamie, and Montgomery had three scientific meetings during the year. Audubon County Medical Society had six meetings, and Harrison County Medical Society held four meetings during the past year. Fremont and Mills Counties held no meetings in 1956.

In March, the Pottawattamie County Medical Society held its annual Iowa-Nebraska Medical Assembly, the program consisting of a symposium on diabetes. All doctors in this and neighboring districts were invited. In September, Page County Medical Society held its annual meeting, inviting all doctors in the District to afternoon and evening sessions, at which the speakers were faculty members of the SUI College of Medicine.

During the month of May, 1956, three meetings were held in the Eleventh District so that physicians might be given information on the doctor-hospital controversy. In each instance, the speakers were officers of the State Medical Society, and in addition, at the Council Bluffs meeting, Mr. Philip Cless spoke. The candidates for political office were invited to attend each of those gatherings, and they and the doctors were encouraged to ask whatever questions might help to clarify the issue.

Most of the counties in the District have participated in the blood bank program. Harrison County also had county-wide school clinics for the giving of diphtheria, tetanus and pertussis immunizations.

New members in the District include Dr. Charles Stinnard, who moved to Glenwood from New York State; Dr. William E. Markham, who has become associated with Dr. Donlin at Harlan; and Drs. M. P. Margules and John Byers, who have located in Pottawattamie County. Dr. Gerald E. Larson returned to Elkhorn in December after service in the armed forces, and Dr. Max Olson returned to Minden from military service.

Dr. Russell Blanchard moved from Council Bluffs to Waterloo. There were four deaths among Eleventh District doctors during 1956. Pottawattamie County lost Dr. Matthew A. Tinley and Dr. E. C. Weir. Cass County lost Dr. W. W. Kitson. Montgomery County lost Dr. Thomas F. Thomsen, who had practiced in Red Oak since 1920.

There are active Auxiliaries in Cass, Montgomery, Page, Pottawattamie and Shelby Counties. Cass County reports the Auxiliary activities are concerned with TODAY'S HEALTH sales, and Page County's program has been directed toward public education, public relations and the promotion of Future Nurses clubs. In each of these counties, the Auxiliary has met on the same nights as the medical society.

In October, the members of the Harrison County Medical Society were guests of the Shelby County Medical Society at Harlan, and as an outgrowth of that meeting a decision was made for the two groups to attempt having several joint meetings a year, with scientific programs. This is a step toward greater medical society activity in those counties.

There has been considerable interest shown in medical society activities in the Eleventh District during the past year. The members have shown interest in the Medicare program and in the proposed Iowa Relative Value Schedule.

Charles H. Flynn, M.D., *Councilor.*

Deputy Councilors:

H. K. Merselis, M.D., Audubon
Roscoe M. Needles, M.D., Cass
A. Roy Wanamaker, M.D., Fremont
A. C. Bergstrom, M.D., Harrison
M. L. Scheffel, M.D., Mills
Edward L. Croxdale, M.D., Montgomery
Kenneth Gee, M.D., Page
Charles V. Edwards, M.D., Pottawattamie
Joseph H. Spearing, M.D., Shelby

Reports of Standing Committees

COMMITTEE ON LEGISLATION

During the past year, district meetings of legislative contact men have been held in each of the 11 councilor districts. Arrangements for those meetings were made by Mr. Gerald Buckles, field secretary, for the

Public Relations Committee and the Committee on Legislation. The public relations representative in each county was invited to those district meetings. As a result of the reorganization of our Legislative Contact Man Program and the close relationship that was developed at those district meetings between the legislative contact men and the Committee on Legislation, our legislative organization seems to be stronger than in the past.

During the year, Mr. Buckles has visited every county in Iowa and has met with the officers of the county medical society and the legislative contact man in almost every county. Those visits have provided for an exchange of information between the Committee on Legislation and the legislative contact men.

A manual for legislative contact men that has been prepared and distributed has elicited generally favorable reactions.

There have been several meetings of the Interprofessional Association, which is composed of representatives from the state organizations of doctors, dentists, veterinarians, pharmacists, nurses and from the Iowa Hospital Association, and at those meetings there have been discussions of legislative problems of mutual interest. The meetings have resulted in a strengthening of the Interprofessional Association.

This report is being prepared just a few days after the opening of the 57th General Assembly of Iowa, and though it is too early for us to tell whether or not significant legislation will be enacted in the health field at the state level this year, it is evident that health problems will receive considerable attention, for several bills that are of interest to physicians have already been introduced. The bill to implement the Joint Declaration on Physician-Hospital Relations has been jointly sponsored by the Iowa Hospital Association and the Iowa State Medical Society. A bill to reorganize the State Board of Health has been introduced, and is receiving the support of the Interprofessional Association. It would increase the size of the Board of Health and would provide representation from several other groups interested in health, such as the dentists, pharmacists, nurses, veterinarians, sanitary engineers and hospital representatives.

Legislation is also anticipated to implement the recommendations of the Governor's Committee on Mental Health. Those recommendations call for rather sweeping changes in the mental health program for Iowa. Legislation to make changes in the laws governing health care for the indigent and legislation to require that the office of coroner be filled by a physician are also anticipated.

When the 85th Congress opened in January, a flood of health bills were introduced. During the first seven days of the session, 140 bills of interest to physicians were introduced. These included proposals for a change in the Social Security program and for changes in the veterans' medical care program, bills calling for the establishment of federal commissions and agencies to deal with the problems of the aged and ones calling for federal loans to hospitals.

One bill at the federal level that is of particular interest to physicians is a new version of the Jenkins-Keogh plan. It would provide for setting up of retirement plans by the self-employed so that taxes on money put into retirement plans would be taxed at the time the money is withdrawn as retirement income, rather than at the time the money is earned. The American Bar Association is taking the lead in sponsoring this legislation, and the chances of its passage seem to be better than they have been in the past.

The budget for 1957 which the President has submitted to Congress calls for considerable increases in expenditures for health. The increase recommended for the Department of Health, Education and Welfare is 23 per cent, including an increase of six per cent for the United States Public Health Service. The budget requested for the Department of Health, Education and Welfare totals $3,070,602,412.

As in past years, representatives of the ISMS Committee on Legislation expect to meet with the Iowa Congressional delegation in Washington early in March.

Members of the Committee on Legislation wish to commend Mr. Robert Throckmorton for the excellent work he has done as legal counsel for the Committee, Mr. Don Taylor for the work he has done as executive secretary, Mr. Ged Buckles for the work he has done as field secretary and Mrs. Dorothy Dolk for her work as secretary to the Committee. Lastly, we wish to express our appreciation to the legislative contact men and to the officers of the Society for their cooperation.

F. C. COLEMAN, M.D., *Chairman.*

NECROLOGY COMMITTEE

The following members of the Iowa State Medical Society died during 1956:

	Age
Ernest M. Adams, Central City	88
Fred F. Agnew, Independence	82
Ralph A. Anrode, Davenport	65
Archie A. Arkin, Des Moines	55
Frederick C. Armstrong, Cascade	62
William Jay Barbour, Shell Rock	32
James W. Barrett, Jr., Independence	60
Edwin G. Barton, Ottumwa	82
David E. Beardsley, Cedar Rapids	77
Alexander S. Beatty, Creston	81
Calvin C. F. Bosch, Sibley	54
Henry W. Bowers, Nevada	73
Charles L. Chambers, Ellsworth, Maine	87
Arthur E. Davis, Seymour	74
Ray H. Dean, Washington	80
Henry F. Dolan, Anamosa	63
James A. Downing, Des Moines	69
Robert B. Fields, LaPorte City	82
Edward H. Files, Cedar Rapids	58
Lafe H. Fritz, Dubuque	70
Henry A. Gray, Keokuk	83
Ross E. Gunn, Boone	74
William H. Harper, Keokuk	67
Frank E. Heathman, Fonda	86
John B. Heles, Dubuque	82
Blanche W. Houser, Cedar Rapids	45
Henry C. Hull, Jr., Washington	82
William A. Johnson, Iowa Falls	48
Kenneth L. Johnston, Oskaloosa	66
Burlin E. Keen, Des Moines	62
Oran W. King, Des Moines	81
Walter W. Kitson, Atlantic	66
Theodore W. Lichter, Edgewood	56

J. Irwin Limburg, Jefferson 78
Simon E. Lincoln, Des Moines 80
Luther W. Little, Atkins 83
Francis L. Love, Iowa City 77
William O. McDowell, Grundy Center 80
William B. Mantle, Albion 83
Loren K. Meredith, Des Moines 65
Frank W. Mills, Ottumwa 88
Wesley J. Morrison, Cedar Rapids 86
Earl H. Noble, Clemons 77
Arthur A. Pace, Toledo 86
Otto H. Pagelsen, Pharr, Texas 86
Everett D. Plass, Saranac Lake, New York 70
Charles E. Porter, Redfield 78
Francis P. Quinn, Dubuque 64
Agnes Isabel Safley, Cedar Rapids 81
J. George Stolley, Moville 79
Thomas F. Thomsen, Red Oak 66
Mathew A. Tinley, Council Bluffs 80
Andrew H. Woods, Wellesley Hills, Mass. 84
Thomas L. Ward, Arnolds Park 60
Walter N. Wright, Rose Hill 89

(The Necrology Committee consists of the Councilors.)

MEDICO-LEGAL COMMITTEE

This year the Committee lost the services of its perennial chairman, Dr. L. K. Meredith, who passed away in September. Dr. Lester D. Powell, of Des Moines, replaced Dr. Meredith as a member of the Committee, and Dr. Van C. Robinson, of Des Moines, was named Chairman.

The Committee has not met during the year, but has stood ready to serve in the event its counsel was needed.

Van C. Robinson, M.D., *Chairman.*

COMMITTEE ON ARTICLES OF INCORPORATION AND BY-LAWS

The Committee has not had occasion to meet during the year. It does not contemplate recommending any significant changes in the Articles of Incorporation and By-Laws, except those that will be necessary to implement an agreement between the Iowa State Medical Society and Blue Shield which is intended to strengthen and improve the liaison between the two organizations. However, the Committee stands ready to receive suggestions for changes in the Articles of Incorporation and By-Laws from any member or constituent county medical society.

A. B. Phillips, M.D., *Chairman.*

COMMITTEE ON MEDICAL SERVICE

The past year has been a most active one for the Committee on Medical Service. At the beginning of the year 1956, many problems were referred to it relative to the proposed changes in Blue Shield's offerings to the public.

Shortly after the 1956 meeting of the House of Delegates, the Committee was handed the assignment of investigating the Defense Department's Dependents' Medical Care Plan, the system which came subsequently to be known by the name "Medicare." The Committee held quite a number of meetings, and eventually it recommended to the officers of the State Medical Society that they agree to participate in it.

After the official position of the Society had been established regarding this system, it became apparent that for possible use by the State Society in administering Medicare, by the component county societies in negotiating compensation for medical service to indigents, and by Blue Shield in establishing allowances to physicians in its proposed new contracts, an Iowa Relative Value Fee Schedule should be worked out on the pattern of the one developed in California. For that purpose, it was decided that a new committee should be set up, one that would be widely representative of the various medical specialties. To that new group, designated the Fee Committee, Dr. W. L. Downing appointed Dr. W. C. Eller as chairman, and Drs. Lee F. Hill, R. N. Larimer and T. D. Throckmorton, in addition to all of the members of the Committee on Medical Service. A report of its work is to be found in this HANDBOOK.

Another matter of considerable importance that was referred to the Committee on Medical Service during the past year concerned the Public Assistance Act which became law when Congress approved the added Social Security benefits under H.R. 7225. The public assistance aspects were contained under Title No. 3. The Subcommittee on Medical Services to the Indigent, under the direction of Dr. Isaac Sternhill, is studying this new law.

Though the past year has been a busy one for the Committee, it seems that with the many socio-economic proposals that are pending, it will have an equal amount of work to do during the coming year.

C. V. Edwards, M.D., *Chairman.*

SUBCOMMITTEE ON MEDICAL SERVICES TO THE INDIGENT

The Subcommittee on Medical Services to the Indigent met at the ISMS headquarters on May 24, 1956, and January 17, 1957.

At the first of those meetings it was agreed that considerable study and research would be required if the Subcommittee were to make intelligent recommendations on the indigent problem. As a means of gathering information, the Subcommittee prepared and mailed a questionnaire to the director of social welfare in each county and a questionnaire to the secretary of each county medical society concerning matters pertinent to the care of indigents.

Seventy-five replies were received from social welfare departments, eight of which were from non-integrated counties and therefore incomplete. An analysis of the replies revealed uniformity in the definition of "indigent person eligible for care." Likewise, there was approximate uniformity in the matter of care for the non-resident indigent.

Of particular importance is the fact that there was a unanimity of opinion regarding the problems that are encountered in the cases of non-resident indigents requiring medical care, and it appeared that most of the county departments saw a need for changing the law as it concerns those people. There was equal agreement on the necessity for a uniformity of fees for services to patients in this category.

With respect to the questionnaires returned by secretaries of county medical societies it can be said that relationships between the societies and the county welfare boards seemed on the whole to be amicable and satisfactory. Here, too, there was evidence of a

general dissatisfaction with the complicated and burdensome method by which the care of non-resident indigents must be handled.

Most significantly, the Subcommittee was happy to find that the fee schedules under which care for indigents is offered are uniformly satisfactory and, in the main, near to conforming with the allowances to physicians provided by the Blue Shield Plan.

In consequence of the complaints that were expressed both by the doctors and by the county welfare officials in response to the questionnaires, the Subcommittee on Medical Service to the Indigent makes the following recommendations to the ISMS Committee on Legislation for further study:

1. that the Iowa State Medical Society go on record as favoring the abolition of the designation "non-resident indigent," and permit the counties of our state to care for the indigents present within their respective jurisdictions at the time that those individuals need medical care, irrespective of their places of legal residence;

2. that the county medical societies be encouraged to adopt a uniform fee schedule conforming to the Iowa Relative Value Schedule developed by the Fee Committee of the Iowa State Medical Society.

At the meeting that the Subcommittee held on January 17, 1957, it discussed the mechanics of setting up a fee schedule for medical care of ambulant individuals in the various indigent categories. Its deliberations on that problem will be the subject of a supplementary report that it is preparing for presentation at the meeting of the ISMS House of Delegates.

I wish personally to express my appreciation, and I ask other members of the Society to give their thanks to my colleagues on the Subcommittee for the work they have done and are continuing to do in connection with these projects. They are Drs. A. J. Havlik, E. B. Grossman and W. D. Haufe.

ISAAC STERNHILL, M.D., *Chairman.*

SUBCOMMITTEE ON PREPAYMENT MEDICAL CARE

The Prepayment Subcommittee got off to a rather late start in the past year, exclusively for the reason that its chairman was preoccupied with other rather chaotic State Society activities, namely Medicare and the development of an Iowa Relative Value Fee Schedule, both of which are covered in other reports in this JOURNAL. The Subcommittee held meetings in October and January, and will meet again in March subsequent to the filing of this report.

It has been the purpose of the Subcommittee this past year to study the prepayment insurance field in its broader aspects. As a first means to this end, liaison has been established with the commercial insurance industry as well as with Iowa Medical Service (Blue Shield). Two consultants to the Subcommittee were appointed, and benefits that are to be derived from their work have already become apparent. One of them is Mr. Kenneth Barrows, claims secretary of Bankers Life Insurance Company of Iowa and a member of the National Insurance Council, the central organization of commercial health insurance carriers. The second consultant is Mr. W. H. Sherin, executive director of Iowa Medical Service and, in addition, an officer of the National Commission on Blue Shield Plans.

One of the areas into which the Subcommittee has moved and hopes to assume an increasingly important role on behalf of the State Society is in the review of disputes between doctors and insurance companies, and between patients and insurance companies. Several such cases have been reviewed, and recommendations have been made. The members of the Subcommittee feel that there is a need for a continuance of such study, and that it need in no way interfere with the work of the State Society's Grievance Committee, since the latter group has a separate sphere of activity.

Considerable progress has been made in the development of a standardized and simplified claim form for reports from doctors to commercial insurance companies. It is now our hope that the Subcommittee can present a recommended standard claim form or forms at the ISMS annual meeting in April, ones which, we trust, will represent an improvement over the maze of forms now in use. It further is our hope that these forms will be accepted by the House of Delegates and given official status. Afterwards, we anticipate their acceptance by the entire commercial insurance industry.

As usual, the Subcommittee has attempted to keep abreast of the current developments in Iowa Medical Service looking toward the implementation of the recommendations that were made by the House of Delegates one year ago. These plans and projected changes are now in an extremely fluid state for a variety of reasons. The physician-hospital controversy has only recently been settled, and the legislative impact of the settlement is still in a measure uncertain. Services are being transferred from Blue Cross to Blue Shield; new service levels are being developed, with deductible and co-insurance provisions; and finally, those new contracts have yet to be approved by the members of the Iowa State Medical Society.

At the beginning of 1957, Blue Shield reported 577,591 members—an increase of 47,422 over 1956. Payments to physicians totaled $5,985,742.11, an increase of $1,003,344.18 over the 1955 payment. The claim loss ratio increased from 80.5 per cent in 1955 to 87.03 per cent in 1956. Actually, our plan lost $50,000 in 1956 without placing any funds in the contingency reserve. Had the reserve requirements been met, the loss for last year would have aggregated $343,855.

Relative to this and other considerations, a study has been started in one county, and will shortly, we hope, get under way in another, concerning trends in the utilization and increasing costs of hospital and medical care both to commercial insurance carriers and to Blue Shield. This study will continue to be a matter of prime concern to the Subcommittee during the coming year.

Finally, the Subcommittee is attempting to keep abreast of changing trends in the prepayment insurance field throughout the country, as well as in Iowa, hoping thereby to secure information that will help it and the other members of the Society who are concerned with the development and future of voluntary prepayment of medical care. A summary of such information currently available to the Subcommittee will be made the subject of a supplemental report for delivery at the ISMS annual meeting in April.

Each year it is obvious that prepayment health insurance is assuming an increasingly important role as the third party in physician-patient relationships. However distasteful this triangulation may be to physicians, it is no longer realistic for them to refuse to acknowledge it as one of the facts of medical life. Nor can anyone seriously doubt that the growth of this third force will continue. Who the third party is to be constitutes the only changeable element in the equation. In other words, there is a question about how much the medical profession will have to say about the direction that this growth will take.

For this reason, the Medical Society and its component members must perforce assume an increasingly aggressive role in determining the development of this force to the benefit both of themselves and their patients. Those who hesitate do so at their own peril.

If we are to have any voice in the developments that are bound to take place, it can only be through a responsible stewardship of Blue Shield—which, thank God, is still the province of the Iowa State Medical Society, so far as this state is concerned—and through an enlightened liaison with the commercial insurance industry.

To fail in the intelligent discharge of this responsibility is to forfeit, perhaps permanently, our right to determine our destiny and that of our sons who may wish to follow us in the practice of medicine.

It is the hope of this Subcommittee that it can aid in the implementing of these philosophies as directed by the House of Delegates and in behalf of the members of the Iowa State Medical Society—including those who may never read these words.

W. C. Eller, M.D., *Chairman.*

SUBCOMMITTEE ON VETERANS AFFAIRS

Your chairman and Mr. Donald L. Taylor attended a national meeting on veterans affairs at Indianapolis, Indiana, since the last meeting of the House of Delegates. There has, however, not been any direct activity wherein it was deemed necessary to call a meeting of our Subcommittee.

R. C. Gutch, M.D., *Chairman.*

COMMITTEE ON MEDICAL EDUCATION AND HOSPITALS

The main project of the Committee on Medical Education and Hospitals has been to reactivate the State Society's participation in sponsoring regional postgraduate medical education courses in Iowa. The Committee is working with Dr. William Keettel, director of postgraduate medical studies at SUI, in order that its activities may be coordinated with those of the College of Medicine and other groups.

The Committee is working with the SUI College of Medicine on plans for a series of postgraduate courses next fall, whereby one-, two- or three-day meetings may be held in several strategically located towns throughout the state. Dr. Keettel is making a survey which will help to determine the type of courses to be given, the length of each course, the time of year and the day of the week which would be most suitable, and whether the programs should include guest speakers other than SUI faculty members.

The Committee is aware of the inadequacies of the present Iowa Code regarding the licensure of foreign physicians serving residencies in Iowa hospitals. It recommended that this matter be referred to the State Society's Committee on Legislation, and that it, in turn, should discuss it with the Board of Medical Examiners. It is hoped that some action can be taken by the Legislature to improve the pertinent sections of the Code, and to develop a more workable plan for the licensure of foreign physicians.

The Committee also feels that there is an urgent need for the establishment of a viral laboratory at SUI. Upon its recommendation, this matter is now being studied by the Public Health Committee of the ISMS.

On recommendation of this Committee, the Iowa State Medical Society has established a statement of policy on private practice by full-time faculty members of the SUI College of Medicine.

Lee F. Hill, M.D., *Chairman.*

GRIEVANCE COMMITTEE

The Grievance Committee has met almost monthly during the past year, except in the summer months. By great good fortune, it had been able to clear its docket in the spring and received no complaints during the summer. Since then, one or two complaints have come in each month, and meetings have been held regularly.

Since I was made chairman, I have gone to Iowa City twice to talk to the senior medical students about the functions and problems of the Committee. Those talks were well received and, I hope, informative. I am glad to report that the students have very high ethical standards, and indeed that their elders might well learn a lesson from them.

Faulty communication seems still to be the principal cause of the complaints that the Committee receives. Either the doctor fails to say enough at the right time, or he says too much at the wrong time. The Committee feels that every physician should take care to explain to his patient in advance (1) what he proposes to do, (2) why it should be done and (3) how much it is going to cost. On the other side of the shield, every physician should be extremely careful in any remarks he may make regarding the treatment given by one of his colleagues.

Itemized statements should be presented whenever possible. The Committee feels, however, that itemization can be overdone. There is no point in breaking down a standard charge for an operation or other service that is usually regarded as a unit. Certainly no itemized statement should contain items that will not stand criticism.

On the whole, it would appear that the Committee has served a useful purpose. Complaints are now less frequent than they used to be, and they are less bitter. The members of the Society do seem to be making an effort to improve their public relations, and they are certainly to be commended for so doing.

F. N. Cole, M.D., *Chairman.*

COMMITTEE ON PUBLIC HEALTH

The Committee on Public Health has, itself, not been active this past year. Several items have been referred to it, but because they required detailed study, each of them was referred to an appropriate one of its subcommittees. The most active of its

subcommittees have been those on Mental Health, Rural Health, Polio and Industrial Health.

E. A. LARSEN, M.D., *Chairman.*

SUBCOMMITTEE ON CANCER

No projects have been referred to the Subcommittee on Cancer within the past year. Therefore, there is no direct activity to report.

E. G. ZIMMERER, M.D., *Chairman.*

SUBCOMMITTEE ON INDUSTRIAL HEALTH

Our committee has been exploring the possibilities of conducting a survey among employment groups in Iowa to determine the various stages of modernization in occupational health programs. Industries in our state are providing various degrees of in-plant health care, and it is felt that one of the major responsibilities of our committee is to get better acquainted with the viewpoint of management and learn more about the employers' and employees' needs and desires in this field.

In 1957 we hope to survey the major industries through the medium of a questionnaire, with the thought that after the survey has been completed, each industrial concern will be sent the conclusions. Such a study should tend to improve the health in each community and promote better relationships not only between labor and management but also between industry generally and the medical profession.

The Board of Trustees has authorized funds to get this survey under way, and it is contemplated that the majority of work and promotion of this program will be handled by the individual Industrial Health Subcommittee members in their respective areas. It will probably take the greater part of 1957 to complete this survey and make our report to industry and the medical profession.

C. J. LOHMANN, M.D., *Chairman.*

SUBCOMMITTEE ON MENTAL HEALTH

The major project of the Subcommittee on Mental Health during the past year has been that of finding ways to implement the plans of the Governor's Citizens' Committee on Mental Health. In working toward this objective, the Subcommittee on Mental Health has met four times. The American Psychiatric Association was employed to conduct a state survey of existing facilities, and the Subcommittee assisted it in an advisory capacity whenever necessary.

Another project of the Subcommittee was the development of a set of Standards for Mental Health Clinics in Iowa. These Standards will be presented to the ISMS Executive Council, and if the Council approves them, it is hoped that the State Society will distribute copies of them throughout the state. The members of the Subcommittee wish to take this opportunity to express their appreciation to Dr. Paul Huston, professor and head of psychiatry at SUI, for the time and energy he has freely devoted to the work of the group.

The Subcommittee was instrumental in the publication of a pamphlet entitled "Mobilizing for Mental Health in Iowa." The Public Relations Department of the State Society has 10,000 copies of it, and intends providing a supply to every doctor's office in the state, for distribution to patients and the general public in support of the plan that has been proposed for improving Iowa mental institutions.

The Woman's Auxiliary to the Iowa State Medical Society is promoting the use of a series of articles entitled "Milestones to Marriage" as instructional material in Iowa high schools. That project, from its beginning, had the endorsement and sponsorship of the Subcommittee on Mental Health.

Liaison has been established between the ISMS Committee on Legislation and the Iowa Neuropsychiatric Society. It is hoped that the close working relationship between the two groups will help a great deal in promoting the enactment of legislation for the improvement of Iowa's mental health picture.

J. I. MARKER, M.D., *Chairman.*

SUBCOMMITTEE ON POLIO

The work of the Subcommittee during 1956 was largely concerned with the Salk vaccine program, and it was carried out in close cooperation with the State Department of Health. Following is a list of the dates on which it held meetings, and of the decisions it made on those occasions.

April 28, 1956. It was decided to advise physicians to withhold first polio shots during the polio season because of the possible provocative action of the vaccine.

June 16, 1956. Because of a later opinion from the surgeon-general's office, the policy of withholding first Salk vaccine shots during the polio epidemic period was rescinded. It was thought that the protective value of the vaccine greatly outweighed its possibly provocative action.

June 28, 1956. In collaboration with the State Board of Health, the Subcommittee decided to extend the age limits of 3-12 years so as to include persons 0-19 years of age, for the Salk vaccine.

July 28, 1956. Because of an increase in the available amount of Salk vaccine, it was recommended that all restrictions be removed and that anyone might have the vaccine.

February 7, 1957. Late in January, the chairman of the Subcommittee had attended an AMA meeting in Chicago called for the purpose of initiating publicity so as to increase public use of the vaccine. At its February 7 meeting, the Subcommittee undertook to formulate recommendations to the ISMS Executive Council on that subject. Subsequently, on February 14, 1957, the chairman of the Subcommittee met with Dr. Zimmerer and the ISMS Committee on Public Health, and the matter was further discussed. Recommendations were sent to the Executive Council of the State Society.

R. H. MCBRIDE, M.D., *Chairman.*

SUBCOMMITTEE ON RURAL HEALTH

The Subcommittee on Rural Health has been busy throughout the year. In reflection, it seems that several desirable results have been achieved.

The preceptorship program, sponsored jointly by the Subcommittee and the Preceptorship Committee at the SUI College of Medicine, was again successful. Drs. R. S. Jaggard, D. G. Sattler and J. E. Blumgren, of the Subcommittee, worked in cooperation with Dr. Stuart Cullen, of SUI, in doing an excellent job of providing preceptors so that junior medical students

were all provided for. Again, in almost every instance, both the physician and the student were highly gratified and felt the relationship had been profitable. It is urged that all general physicians who can arrange to serve as preceptors should volunteer their services either to the State Medical Society office or to the dean of the SUI College of Medicine. A stimulating experience, well worth the expenditure of time and effort that is required, awaits those who choose the role of preceptor.

A very attractive certificate of service was mailed to each of those who have served as preceptors in the past years. The certificates were signed by Dean Norman Nelson, of the medical school, and by Dr. Wendell Downing, president of the Iowa State Medical Society. For those who have served as preceptors for three or more years, special seals designating that fact were attached to the certificates.

The members of the Medical Societies of Appanoose and Hamilton Counties have recently begun a year's reporting of all farm accidents that they treat. It is the first extensive farm-accident reporting by physicians anywhere in the United States. These reports will be analyzed by Dr. Norval Wardell, farm safety engineer at Iowa State College, and also by the Institute of Agricultural Medicine at the SUI College of Medicine. Such studies should provide information on how and why farm accidents occur, and more important—it is hoped—on practical means for preventing them. The doctors of Appanoose and Hamilton Counties are to be highly commended for making this important research study possible.

The Institute of Agricultural Medicine at SUI is in the process of establishing surveys on the incidence and causes of eye injuries and occupational skin diseases among farmers. These surveys are being carried out in selected pilot areas of the state. It is urged that all physicians living in those areas cooperate with the Institute in those projects.

Worthy of report is the important new service that will soon be established by the State Department of Health. It is the Poison Control Center to be located at Raymond Blank Memorial Hospital, in Des Moines. A catalogue of all products used in the household and on the farm, together with lists of their toxic ingredients, will be kept there. The Center will be physician-manned day and night, so that any doctor having a case of suspected poisoning will be able to call the Center and not only obtain information as to the poison involved, but in addition get information on the best methods of combatting it.

On March 12, 1957, the first State Rural Health Conference will be held in the Memorial Union on the campus of Iowa State College, in Ames. The Conference is being sponsored by the Iowa State Medical Society and several co-sponsors, including the SUI College of Medicine, the State Department of Health, the Extension Service at Iowa State College, the Iowa Farm Bureau and several voluntary health organizations. The Subcommittee on Rural Health has received excellent cooperation from the co-sponsoring groups in the development of a very outstanding program. The theme of the Conference is to be "Stresses and Strains in Rural Living." Outstanding speakers from Iowa and other states have been obtained. Through the channels afforded by the co-sponsoring organizations, it is anticipated that a good representation from the farm people over the state will be in attendance. The educational as well as the public relations value of such a conference should be great.

In some counties, the local medical societies have held rural health forums. These forums have been well received, and have been a means for disseminating health information of particular interest to the farm population. It is hoped that more county societies will sponsor such forums in the coming year. Information on how to develop a forum can be obtained from Mr. Ray Stewart, public relations director, at the Iowa State Medical Society office. The Institute of Agricultural Medicine has been helpful in offering advice and in providing speakers for such programs.

The Physician Placement Service, a part of the activities of the Subcommittee on Rural Health, has been helpful in locating physicians. Currently, there are only three towns in Iowa having more than 1,000 people that are without a resident physician. There are, in addition, 33 towns having populations from 500 to 1,000 people without a physician. Although many of those places are not in great need, because of their proximity to towns with physician service, there are some areas in critical need, and the Placement Service has been diligent in attempting to place physicians there.

Again, the Subcommittee wishes to commend Mr. Wilbur Quinn, who has represented it at the office of the State Medical Society. His efforts have had a very big part in whatever it may have accomplished during the past year.

S. P. Leinbach, M.D., *Chairman.*

SUBCOMMITTEE ON REHABILITATION

On November 27, 1957, the Subcommittee on Rehabilitation met to consider the question, referred to it by the ISMS Executive Council, of "whether the State Agency, a separate unit within the Division of Vocational Rehabilitation of the State Department of Public Instruction, should continue to determine total disability for the Federal Office of Social Security under the amendments to the Social Security Act adopted in 1956 (Public Law 880, 84th Congress, Chapter 836, Second Session, H.R. 7225)."

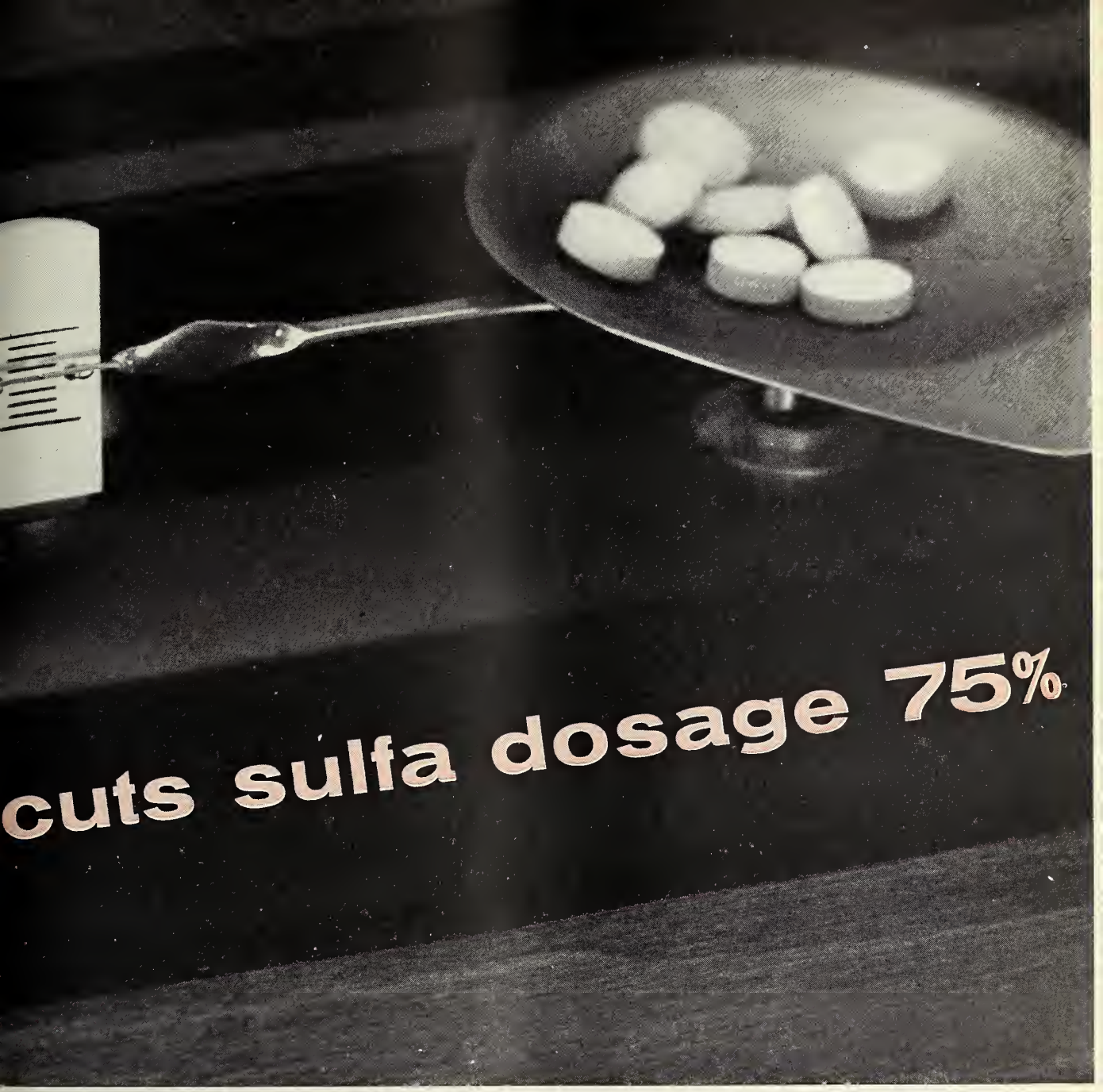
Public Law 761 had provided, under Section 221, that the secretary of health, education and welfare should enter into agreements with the states providing for determination at the state level of eligibility for the Social Security "freeze." The 56th General Assembly of Iowa had passed legislation assigning this responsibility to the Department of Public Instruction, and more specifically to its Division of Vocational Rehabilitation. The Department of Public Instruction had then, quite wisely, set up an office designated "State Agency" for the performance of this function, and for the past year has been passing upon the applications of individuals who wished to take advantage of the "freeze" before reaching the age of 65. In essence, the "freeze" is a waiver of premiums, so that upon reaching the age of 65, the individuals may draw Social Security benefits just as if they had been engaged in covered employment constantly up to that time. The 1956 amendments made totally disabled people eligible for cash benefits, rather than just waiver of premiums, starting at age 50.



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1. Boger, W. P.; Strickland, C. S. and Gylfe, J. M.: Antibiot. Med. & Clin. Ther. 3:378 (Nov.) 1956.

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Since the assurance of cash benefits for the totally disabled is likely to lessen or remove the incentive for vocational readjustment for handicapped persons over 50 years of age, the Office of Vocational Rehabilitation now has the added task of finding ways to make people want to be rehabilitated.

It was the consensus of the Subcommittee on Rehabilitation that the "State Agency" should continue to determine disability, for if it were not to do so, all determinations of disability would henceforth be made at the national level, and a state right would go by default. Furthermore, there would be no further occasion for the Medical Society to offer its advice or opinions on the subject.

Since the "State Agency" is merely a fact-finding organization and is dependent to a considerable extent upon the information it receives from the members of the Iowa State Medical Society, the Subcommittee urges a renewed pledge of cooperation from Iowa doctors. Paper work is an annoying chore, but cash benefits for the disabled at and beyond age 50 are now the law of the land, and though physicians—or most of them—opposed its enactment, they have the responsibility of seeing to it that it is administered fairly. If they continue to disapprove of the law, it is their privilege to talk with their Congressmen about repealing it.

The Subcommittee made the following suggestions (not recommendations):

1. It may develop that there is a need for expert reviewers to supplement the present "State Agency."
2. Perhaps the forms used by the Social Security office can be revised to make the doctor's paper work less cumbersome and to elicit more useful information.
3. The Subcommittee might help to make doctors more inclined to cooperate with the government by providing them information about legislation, existing or proposed, in the rehabilitation field.

CARROLL B. LARSON, M.D., *Chairman.*

COMMITTEE ON PUBLIC RELATIONS

During approximately half of the period since the 1956 annual meeting of the Iowa State Medical Society, the Committee on Public Relations has been engaged principally in activities associated with the physician-hospital controversy. In much of this work, the Committee worked in cooperation with the Committee on Legislation. The members of the Committee on Public Relations participated in district meetings with county legislative-contact and public-relations men. In this effort, 25,000 booklets on the issues in the controversy were distributed under the supervision of the ISMS Public Relations Department, which had prepared and printed them.

Following the cessation of the Committee's active participation in this sort of work, our chief efforts have been directed toward interesting members of county medical societies in various projects which we feel are worthwhile. One of our major public-relations activities has been the preparation of ten "institutional" advertisements for use by county societies in their local newspapers. Acceptance and use of these ads will continue to be encouraged, and our efforts are meeting with increasing success.

The Public Relations Committee cooperated with the Committee on Health Education in the continuance of the Society's television broadcasts. That activity is being reported in some detail by the chairman of the latter committee in this HANDBOOK.

The Committee has cooperated with individual county societies in the development of public relations projects such as medical forums and local television or radio programs.

A second successful Senior Day was held at the SUI College of Medicine in the interests of the senior medical students and their wives. It is the purpose of Senior Day to provide practical information concerning the establishment of a practice and to set forth some of the objectives of organized medicine and acquaint the men who are about to enter practice with the organizational pattern and services of the Iowa State Medical Society.

With the conclusion of the doctor-hospital controversy, the Committee re-examined its role and adopted the following broad policies:

1. On the local level, this Committee plans to continue to present specific projects to local medical societies and to encourage them to use those projects or to initiate ones of their own.
2. On the state level, this Committee plans to provide more programs of a public-service and public-information nature.

OTTO N. GLESNE, M.D., *Chairman.*

REPORT OF SUBCOMMITTEE ON INTERPROFESSIONAL ACTIVITIES

During the past year no interprofessional problems were presented to the Subcommittee for consideration. Members of this Subcommittee attended the meetings of the Iowa Interprofessional Association and gave their support to the activities of that group.

FLOYD M. BURGESON, M.D., *Chairman.*

COMMITTEE ON HEALTH EDUCATION

The Committee on Health Education has continued to provide health information through the media of press, radio and television.

The "Medical Diary" television programs are now being filmed at Broadlawns-Polk County Hospital, Des Moines, and distributed to various television stations throughout the state. The programs are shown over WOI-TV, Ames; KTIV, Sioux City; KQTV, Fort Dodge; KGLO-TV, Mason City; and KCRG-TV, Cedar Rapids. From January 1, 1956, to January 22, 1957, a total of 47 shows were produced. Twenty-one of those programs were presented live over WOI-TV and kinescoped for showing elsewhere; the remaining 26 were filmed. The change from live productions to film has been highly successful, for filming facilitates our showing more diversified and more authentic programs.

Through economies developed by Mr. Ray Stewart, the ISMS public relations director, our average cost per film has been only $130, and since each film is subsequently viewed by audiences that are estimated to total more than 100,000 individuals, our per capita cost is only $.0013. During 1957, we plan to produce 48 films on a budget of $6,720, or $140 per program.

The radio health programs for which the AMA furnishes transcriptions are broadcast over WOI, Ames; WSUI, Iowa City; KWBG, Boone; KCOB, Newton; and KCHA, Charles City. Each program is 15 minutes in length, and there are 13 programs in a series. In some instances, the transcriptions are sent directly to the station, and in others they are sent to us for relay to the station.

The members of the Health Education Committee are

also responsible for health articles that are published bi-monthly in WALLACE'S FARMER under the heading "Iowa M.D.'s Say." The articles have been well received by the subscribers.

The Speakers' Bureau has secured speakers for three county medical society meetings and six lay meetings during the past year. Plans are being made to make this service more generally known, and we hope to expand the activities of the Speakers' Bureau.

R. B. Stickler, M.D., *Chairman.*

Reports of Special Committees

COMMITTEE ON BLOOD BANKING

Your Committee on Blood Banking is now in its second year. An analysis of blood banking in Iowa that was conducted during 1955 revealed that there were a total of 58 blood banks. Eight of them were walking blood banks, not maintaining blood reserves. In 15 (26 per cent) of these blood banks, no physician director had been designated.

The directory of the American Association of Blood Banks indicated only 16 individual members of that organization in Iowa, and eight institutional members in this state. The overlapping of individual and association memberships is such that 75 per cent of Iowa blood banks have no apparent contact with the AABB, and therefore have no access to the excellent publications that it makes available concerning the organizational and technical aspects of blood banking.

Your Committee on Blood Banking strongly suspects that some form of organizational discipline is needed for the blood banks in Iowa. It could be of great benefit and protection to the banks themselves and to the hospitals and communities which they serve. The people of Iowa are entitled to the protection which would derive from the organization of an Iowa Association of Blood Banks sponsored by the Iowa State Medical Society with the assistance of members of the Iowa Association of Pathologists who are most actively engaged in this specialty of blood banking.

Standardization programs conducted in Illinois and Wisconsin through the facilities of the blood bank associations in those states have revealed great need for standardization of technics. We probably have similar needs in Iowa.

Your Committee is conducting two state-wide surveys designed to supply much more concise information concerning blood bank operations in the state. One of these surveys has been undertaken from the layman's point of view with the assistance of the Women's Division of the Iowa Farm Bureau. A limited survey, covering selected members of the county medical societies, will be designed to get the names and addresses of blood banks and of the personnel actively engaged in operating them, as well as more precise information regarding the technics in use.

Your Committee chairman has been in Chicago several times for meetings of the North Central District Blood Bank Clearing House, which is now completing transfers of blood credits and blood from coast to coast at a rate of about 2,500 transactions per month. The volume of transactions is steadily increasing. The Clearing House is now operating at a small profit, and if volume continues to increase as anticipated, a start will be made toward the repayment of loans from the sponsoring medical societies of the 10-state north central district. In the opinion of your Committee, the Clearing House has a positive practical and public-relations value.

W. S. Pheteplace, M.D., *Chairman.*

CHIROPRACTIC COMMITTEE

Since the 1956 Annual Meeting, the Chiropractic Committee has met three times. Between meetings. and up to and including the present, its members have been diligently accumulating information on chiropractic. Information on the scope of the cult, on its background and growth, and on the effectiveness of the efforts made to combat its rise elsewhere in the nation have been secured from nearly every state, and voluminous material has been secured from the AMA Council on Medical Service. In addition, the members were able individually to secure a great deal of literature, particularly from various ones of the chiropractic schools around the country.

The Committee became deeply impressed by the successes—both in legislation and in public relations—that chiropractors have achieved in some states. Indeed there are places where the public has become so confused that it fails to distinguish a "doctor" of chiropractic from a doctor of medicine. Furthermore, the Committee is alarmed over the fact that many M.D.'s in Iowa apparently are unaware of the seriousness of the situation and of the increasingly numerous attempts that chiropractors are making to gain power not only at the state level but nationally.

If one were to believe the literature sent out by nine chiropractic schools, he would come to the conclusion that the student of that cult is given precisely the same training as the *bona fide* medical student. The courses, to a large degree, bear the same names, and nothing is said of the vastly inferior quality of instruction, the shortness of the course, the lack of proper clinical training or the paucity of scientifically proved therapies that the "graduate" is entitled to administer.

On the other hand, the Committee has also been impressed by the successful efforts of some states in passing stringent laws curtailing or prohibiting chiropractic, even though the cultists have previously gone unchecked for a number of years.

As will be recalled from the Committee's report at the 1956 Annual Meeting and from subsequent mailings to the profession from our confreres of the Committee on Legislation, there are two chiropractic organizations that have both their state and national headquarters in Iowa. The Iowa Chiropractic Association and National Chiropractic Association ("mixers") are headquartered in Webster City. The Chiropractic Society of Iowa and its parent group The International Chiropractic Association ("straights") are headquartered in Davenport, and are more or less under the direction of B. J. Palmer, son of the late D. D. Palmer, the "father" of chiropractic.

Because of the ever-widening efforts of the "mixer" group, in Iowa and in the nation, to broaden its members' scope of practice so as to make them physicians by legislation, though not in fact, your Committee has endeavored, in cooperation with the Committee on Legislation, the Committee on Public Relations and other groups of ISMS members, to carry out as well as possible the recommendations which the House of Delegates made on this subject at its 1956 meeting.

Following are the actions that the Committee and/or other committees of the State Society have taken:

1. At the behest of the Chiropractic Committee, the

Committee on Legislation has approved and sent out to all county legislative contact men a list of identifying chiropractors belonging to the "mixer" and "straight" groups, along with a list of the various committeemen and officers, particularly of the "mixer" group. This was done so as to acquaint doctors—and, through them, the legislators—with the chiropractors who are responsible for proposed legislation that would expand chiropractors' privileges and allow them to make inroads into the practice of medicine.

2. The Committee on Legislation, at the recommendation of the Chiropractic Committee, has also sent up-to-date information on chiropractic legislation to the various legislative contact men from time to time.

3. The ISMS legal counsel, Mr. Robert Throckmorton, has been and is now maintaining a very close liaison with the legislators in regard to proposed chiropractic legislation, and has been most helpful to the Committee and to the State Society.

4. The suit brought by the "mixer" group against the Commissioner of Health and others late in 1955, so as to obtain a declaratory judgment that a chiropractor could be appointed commissioner, sign death certificates, etc., was dismissed on May 18, 1956, by a judge of the Polk County District Court. The dismissal said, in part, that the Court "should not entertain the determination of hypothetical, moot, academic, unnecessary or trivial determinations." Later, an appeal was made by the "mixers," and the Supreme Court of Iowa ruled that the District Court must hear the case on its merits.

5. Your Committee has under preparation a condensation of all the material that its members have obtained on chiropractic, and that condensation will be sent to all legislative contact men and possibly to others, if the State Society approves. The pamphlet may also be used as a basis for a public relations program against the chiropractors on a state-wide basis, if such action becomes advisable and necessary.

In view of the above, the Chiropractic Committee recommends the following:

1. That the ISMS continue its Chiropractic Committee, and that the Committee be empowered to work in close liaison with the Committee on Legislation, the Committee on Public Relations and other State Society groups.

2. That the ISMS attorneys continue vigorously to combat the efforts of the chiropractors in the Legislature and in the courts, when they are attempting to expand their scope of practice.

3. That the ISMS continue to consider the advisability of a public relations program regarding chiropractors.

In closing, I wish to commend the other two members of the Chiropractic Committee, Drs. John Kersten and Bruce Howar, and our legal counsel, Mr. Robert Throckmorton, for their devotion to duty and for their plain hard work.

RAYMOND BERGER, M.D., *Chairman.*

FEE COMMITTEE

At its meeting in April, 1956, the House of Delegates of the Iowa State Medical Society approved a report of its reference committee on insurance and medical service which contained the suggestion that study be given to the idea of developing an ISMS Relative Value Schedule on the pattern of that formulated in California. In September, the Executive Council authorized the appointment of a Fee Committee to develop an Iowa Relative Value Schedule. That Schedule was to consist of units, rather than dollar values, and was to serve as a means of determining ratios between the compensations to which physicians are entitled for the performance of various procedures. It was anticipated that uses would be found for it in Medicare, in Blue Shield and in the care of the medically indigent.

The committee appointed on August 29, 1956, by Dr. W. L. Downing, president of the Iowa State Medical Society, consisted of the following physicians: W. C. Eller, M.D., chairman; R. N. Larimer, M.D., C. V. Edwards, M.D., W. D Abbott, M.D., R. F. Birge, M.D., R. C. Gutch, M.D., Isaac Sternhill, M.D., Lee F. Hill, M.D., Tom D. Throckmorton, M.D., and C. H. Stark, M.D.

From previous meetings on this general subject, the Fee Committee had some information to go on—especially from the Medical Advisory Committee of Iowa Medical Service (Blue Shield)—and further, it met with representatives of the Iowa Academy of General Practice and various specialty societies in the state. Additional background information was obtained from the relative value schedules now in use in California and Nebraska. Finally, the Committee members were each able to bring to the deliberations a considerable experience in one of the various specialties and in one of the geographic areas of the state.

The first aim of the Committee in establishing an Iowa Relative Value Schedule has been to compare the various procedures in medicine, surgery, radiology, and pathology on the basis of present charges in use throughout the state—not on the basis of ideal or wished-for charges. Second, it sought to iron out the irregularities and inadequacies of various previous fee schedules, most of which have allowed too much for certain procedures and too little for others. Finally, for administrative purposes, the Committee has been concerned with the development of a standard nomenclature and coding for all such procedures.

Early in its deliberations, the Committee was confronted with the proposition that there should be two relative value schedules, one for general practitioners and the other for specialists. This proposal, after due consideration, the Committee deemed unworkable and not in keeping with its assignment.

If this Relative Value Schedule is utilized by Iowa Medical Service and if, as is hoped, it has an impact upon various commercial fee schedules, it should serve as a guide for purchasers of voluntary prepayment health insurance, whether they wish to purchase indemnity insurance or full service coverage approximating the usual fee charged, or wish to purchase partial protection at a lower premium and will accept an element of co-insurance.

All the values in the present schedule are based on $5.00 per unit, according to the committee members' best impressions regarding charges prevailing today. Future changes in overhead costs may necessitate a different dollar unit value in the four categories of medicine, surgery, radiology and pathology, but it will still be possible to leave the unit values in the schedule unchanged.

In addition to the unit values, the Committee has introduced some statements of policy as integral parts

of this Relative Value Schedule, not because it felt empowered, or even wished, to determine practice by fiat, but because clarification of some points seemed essential to the administrative implementation of the Schedule.

Beyond these points, other questions relating to varying ideologies of indemnity *versus* service *versus* deductible *versus* co-insurance are outside of this Committee's sphere of responsibility and should not be considered during the evaluation of this project. The Schedule relates merely to the relative values of different physicians' services.

The Committee does not claim to have attained perfection in this first publishing of an Iowa Relative Value Schedule. It does hope, however, that it has taken a long step toward standardization of procedures and relief of previous inequities, while at the same time it has given substance to the medical profession's exclusive right and duty to establish and interpret its own fees. Finally, the Committee hopes that the members of the Iowa State Medical Society, under the direction of the Society's officers and delegates will criticize the Schedule constructively, and that the Committee may then make necessary adjustments and corrections in it from time to time.

William C. Eller, M.D., *Chairman.*

OSTEOPATHIC COMMITTEE

The Osteopathic Committee has held several meetings and discussed a number of problems during the past year.

The controversy between the Polk County Soldiers' Relief Board and Broadlawns Hospital was brought to the attention of the Committee, and an eventual solution to the problem should be forthcoming if all agencies concerned continue an active interest. The Polk County Medical Society has called to the attention of the Soldiers' Relief Board the fact that the alleged contract with Still College infringes upon the patient's right of free choice of physician.

The question of including osteopathic physicians and surgeons under the Medicare program was considered. The federal law governing Medicare stipulates that only physicians and surgeons are eligible to provide care for military dependents at government expense, and a physician and surgeon is defined as one who is legally qualified to prescribe and administer *all* drugs and to perform *all* surgical procedures. Under an Iowa attorney general's opinion issued in 1948, osteopaths licensed as osteopathic physicians and surgeons appear to have the right to administer *all* drugs and to perform *all* surgery. (This opinion has been neither accepted nor officially challenged by the Iowa State Medical Society.)

It would, therefore, follow that only those licensed osteopathic physicians who are further licensed as osteopathic surgeons would be eligible to receive payment under the Medicare program. Your Committee recommended that arrangements be made to pay such fees directly to a legally designated agent. The Iowa Society of Osteopathic Physicians and Surgeons has been advised that this arrangement will be made without prejudice or without waiving our right to challenge the 1948 attorney general's opinion.

Members of the Committee met with individual physicians and hospital staffs on several occasions, attempting to clarify relations between doctors of medicine and osteopaths.

An important problem facing our entire membership is that of clarifying our ethics with regard to relations between doctors of medicine and osteopaths. This problem must be considered within the framework of both the AMA Code of Ethics and our state and federal laws. Your Committee has studied this matter intensively, and it plans to bring specific recommendations before the House of Delegates in the form of a supplemental report at the annual meeting in April, 1957.

J. M. Rhodes, M.D., *Chairman.*

COMMITTEE ON NATIONAL EMERGENCY MEDICAL SERVICE

The establishment of an organized Emergency Medical Service in Iowa—one which will be capable of meeting the need for casualty care in any natural or man-made disaster or in event of enemy attack—is a problem which staggers the imagination, particularly since it is necessary to make it mobile, so that it can provide casualty reception for contiguous areas in time of need. The problem is compounded by the fact that enemy attack and some natural disasters might require the establishment of special services to cope with the public health problems engendered by massive shifts of population and with the special weapons of radiologic, chemical and biologic warfare.

The successful meeting of these emergencies will demand amounts of manpower and material that are unavailable to governmental and quasi-governmental agencies as they presently exist. Therefore, a voluntary movement among the responsible citizens of Iowa must be started and given leadership. There has been and still is an attitude of complacency toward the possibility of a grave natural disaster, a complacency that is difficult to understand in the light of the experience of some of our neighboring states and indeed some sections of Iowa. And then there is the natural inertia of any large group, particularly one so loosely organized as the citizenry of a democratic state.

It has been the task of the Committee on National Emergency Medical Service to study this problem and to find how the physicians of Iowa can initiate and influence action that will provide a solution for it, thus discharging their responsibility for leadership in all things relating to the health of the people.

The organization of an Emergency Medical Service in Iowa must be based, not upon any new structure, but upon the personnel and facilities presently available in the state. The resources are as follows:

1. Facilities for the care of the sick and injured, such as hospitals and their staffs
2. The members and the organizations of the various professional societies in the state which deal with matters of health
3. Governmental agencies such as the State Department of Health and the Iowa Civil Defense Authority
4. Federal government agencies such as the U. S. Public Health Service and the Federal Civil Defense Authority.

The goals of the planning and implementation of the plan are as follows:

1. To organize available trained personnel into working units so as to assure maximum utilization of the skills which they already possess

2. To train those persons further for different work or for added effectiveness in the activities to which they are assigned

3. To train volunteers for necessary positions in the organization

4. To plan the effective use of existing health facilities and to augment them when necessary

5. To provide an executive structure which will insure effective use of this organization

6. To do all this in such a way as to make the Emergency Medical Service an organic unit in the civil defense organization of Iowa.

The job is too big for any one of the professional organizations of the state, and pooling of effort is therefore necessary. To this end, the Committee on National Emergency Medical Service has invited representatives from other groups to meet with it to formulate plans and to combine with the Iowa State Medical Society in a concerted attack upon the problem. The Committee has met with representatives of the State Department of Health, the Iowa State Nurses Association, the Iowa Hospital Association and the Iowa Veterinary Medicine Association. Each of those groups has been individually active in seeking what part it might play in civil defense and in emergency medical service, and each has concluded that the task can be done only by combined efforts.

From our discussions, it was apparent that much had been done in the way of local organization in some communities, and that a considerable amount had been accomplished by some societies toward special training for their members. All felt the need for some central direction and planning which would weld those individual efforts into a smoothly-functioning whole.

Some of the individual efforts in organizing and equipping emergency hospitals have been made by county medical societies. All accredited hospitals in Iowa are now faced with the necessity of formulating plans for emergency service, and the further necessity of testing those plans. In this endeavor, the physicians and staff members must play an important role. A number of hospitals in the state will have completed their plans before the Annual Meeting of the Iowa State Medical Society, and members of the Society are urged to give all possible assistance in the testing and necessary refinement of those plans.

Although it should be our aim to make the organization that we evolve in cooperation with other societies into a part of the Health Services and Special Weapons Defense Section of the Iowa Civil Defense Agency, our efforts must, for now, be somewhat limited. At the joint meeting of the several societies, it was decided that our immediate objectives should be the following:

1. The development of a skeleton organization at the state level

2. The organization of the medical communities

3. The writing of a plan for the organization and operation of the Health Services and Special Weapons Defense Section.

In accordance with those objectives, the group which met at the invitation of the Iowa State Medical Society offered itself as an advisory committee to the medical director of civil defense of Iowa. It is to be expected that this group will be the forerunner of his staff.

It was further decided that the major effort should be directed toward organization of emergency medical services in the communities of Iowa, and that these organizations should be built about the hospitals which are required to complete plans for operation under emergency conditions. Because successful completion of plans in communities will involve many persons who are not members of any of the professional societies, it was decided that groups should be formed in several areas of the state to help in organizing those individuals.

Because it appeared some time ago that such an approach might be necessary, the president of the Iowa State Medical Society had appointed to the Committee on National Emergency Medical Service a member from each of the eight Civil Defense Districts in Iowa. These persons now become key individuals in the next organizational step. Between February 1, 1957, and the time of the annual meeting of the Iowa State Medical Society, they will have called a meeting in each of the districts and will have invited representatives designated by each of the other professional societies and such other persons as seem able to contribute to the organization. The director of Civil Defense in Iowa was requested to send a representative to each of those meetings. At the time of the meeting of the Iowa State Medical Society, the state advisory group will meet again to discuss the results of those meetings and to recommend further action.

Writing an over-all plan of operation for the state has been started, but this will evolve from experience and from the combined efforts of the advisory group.

Emergency medical service in Iowa cannot operate without reference to similar set-ups in other states, for we may be called upon for mobile support or asked to accept casualties from outside our borders. Thus, it is necessary for us to maintain liaison with other state organizations, with the federal Civil Defense agency and with the U.S.P.H.S. The United States is divided into several multi-state regions, and Iowa is in Region VI, along with Wyoming, Colorado, North and South Dakota, Nebraska, Kansas and Minnesota. At the regional level, a council to the medical officer of the region is being formed, and I attended the organizational meeting that was held on January 18 and 19, 1957. The State Medical Society will be asked to appoint a permanent representative to that council, who can attend its periodic meetings for briefing on regional and national plans, information concerning supplies and technics, and coordination of state plans. These meetings will be of great value in the formulation of plans within the state.

The Committee on National Emergency Medical Service recommends the following:

1. That the Iowa State Medical Society continue to foster the organization of emergency medical services in all communities, and seek the aid of other professional societies in this endeavor

2. That the individual members of the Society seek and accept responsibilities for emergency medical service in their respective communities.

ROBERT C. HARDIN, M.D., *Chairman.*

ADVISORY COMMITTEE TO THE WOMAN'S AUXILIARY

The Advisory Committee to the Woman's Auxiliary has been very active during the past year. In most of the counties of the state, the county medical society and its auxiliary, working together, have been leaders in community health projects, and thus have helped to spread pertinent information and to promote specific improvements in their respective areas. This Committee's responsibility has been to approve projects designed to carry out the National Auxiliary's theme "Health Is Our Greatest Heritage."

The Iowa Auxiliary's Nurse Recruitment and Loan Fund Committee has participated in many projects this past year. Auxiliary members have sponsored Future Nurses Clubs—some of them newly organized, and others of two or more years' standing—in order to guide teen-age girls toward careers in the health services, and loans have been made to girls who could not have started nurses' training without such assistance. At present, 15 girls are receiving loans from the Auxiliary; $5,512.95 is out on loan; two girls repaid their loans during the year; and several girls who have filed applications will receive loans next fall. The Auxiliary's Loan Fund is supported through an assessment of $.50 per member, plus memorial contributions. In 1956, the fund was increased by $350, the amount cleared at the benefit dance held during the Annual Meeting. That project will be repeated this spring.

The Future Nurses Clubs' conference, previously held in April in conjunction with the State Auxiliary's annual meeting, has been moved to October and henceforth will be held annually during that latter month. At the October, 1956, meeting, 200 girls attended as representatives of 50 Future Nurses Clubs.

The Nurse Recruitment Committee continues to take an active part in the work of the inter-organizational Iowa Nursing Careers Committee, which enlists trainees for both regular- and practical-nurse training programs.

On the recommendation of the ISMS Subcommittee on Mental Health, the Auxiliary has undertaken to sponsor a pilot study program in which high schools are using a series of letters entitled "Milestones to Marriage" as instructional materials. Local school advisors and ministerial associations are cooperating.

The Auxiliary committee responsible for promoting the sale of TODAY'S HEALTH again hopes to meet its quota, and it is felt that the magazine is so effective in conveying health information to lay readers that the Auxiliary members' efforts in selling it are well repaid.

The Auxiliary's committee for handicapped craft sales again sponsored seven sales of articles made by handicapped people. Department stores in six areas and one county fair board donated space for them, and Auxiliary members acted as saleswomen. All proceeds go to the individuals who have made the articles, in cooperation with the Iowa Society for Crippled Children and Adults. The sales were held again in Fort Dodge, Sioux City, Dubuque, Waterloo, Burlington, Des Moines and Spencer.

The Auxiliary's Committee on Legislation has cooperated with the Committee on Legislation of the ISMS in keeping doctor's wives informed regarding current legislative problems, and has expressed a desire to be of whatever further assistance possible. Representatives from the Woman's Auxiliary were among the groups that were recently taken on tours of the Board of Regents institutions.

The Public Relations Committee of the Auxiliary will present an award for community service to an Iowa woman other than a physician's wife who has done outstanding health work in her community. This award was first given last year, and the presentations are to continue.

The Auxiliary participated in the Senior Day program held at the SUI College of Medicine last May, and it has two of its members representing it on National Woman's Auxiliary committees.

The American Medical Education Fund, Civil Defense, and Safety Committees of the Auxiliary have all been active at the state level and locally, and there are others of the women's activities that I should like to mention if space in this HANDBOOK were not quite limited. Since it is generally agreed that education is the foundation for improvements in community health, education has been emphasized by the Auxiliary. Many projects are suggested to the county chapters, and each of the local groups chooses the ones that seem to meet the needs of their particular communities.

The current membership of the Woman's Auxiliary to the Iowa State Medical Society is 1,042. There are 42 county auxiliaries and 73 members-at-large. Chapters are in the process of formation in three additional counties, and it is hoped that more county medical societies will help to organize the doctors' wives in their areas.

FRED STERNAGEL, M.D., *Chairman.*

COMMITTEE ON NURSING EDUCATION AND SERVICE

The Committee on Nursing Education and Service has held no formal meetings during the past year, but has acted in an advisory and consulting capacity several times.

The Committee, last November, furnished a representative to meet with the Iowa Nursing Careers Committee, a group which is doing excellent work in the nurse-recruitment program. All of the schools of professional nursing in Iowa have almost capacity enrollments this year, 1,095 new students having been admitted to the 25 professional schools during 1956.

Sixty-one students were enrolled in the four schools of practical nursing. These schools are capable of accepting more students than they now have.

The Committee also furnished a speaker for the Future Nurses Club Day which was held at Drake University. The Future Nurses recruitment program is sponsored by the Woman's Auxiliary to the Iowa State Medical Society. It has been one of the most successful means of recruiting nursing students.

In September, the Board of Trustees of the Iowa State Medical Society asked the Committee to consider the question of naming two people to serve on a state committee in connection with the development of licensed practical nurse training in Iowa, in response to a request from the State Department of Public Instruction. The 84th Congress, under Title II of Public Law 911 (Chapter 871, Second Session), had

appropriated funds for the promotion of practical nurse training.

The Committee on Nursing Education and Service held a telephone conference on the matter and came to the following conclusions:

1. Even though the professional schools of the state are filled almost to capacity, they are still unable to meet Iowa's demand for professional nurses
2. The standards set for professional nursing schools make it increasingly difficult for smaller hospitals to conform, with the result that they may be forced to discontinue training nurses (one school of nursing recently closed in Clinton)
3. With the increased hospital construction brought about by the use of Hill-Burton funds, the need for nurses can be expected to increase
4. Since many of the smaller hospitals throughout the state are largely staffed with practical nurses, it is important that provision be made for training those nurses at a number of points in the state.

Therefore, this Committee went on record as favoring cooperation with the Department of Public Instruction in promoting practical nurse training in Iowa. Dr. W. L. Downing, president of the Iowa State Medical Society, followed that recommendation by appointing two physicians to serve on the state committee.

It is understood that the Adult Education Department of the Des Moines Public Schools is considering the establishment of a school of practical nursing in Des Moines.

E. P. LOVEJOY, M.D., *Chairman.*

HISTORICAL COMMITTEE

The medical histories of three Iowa counties have been written during the past year. Dr. Alice Cary Stinson, of Estherville, wrote the one for Emmet County, and it was published in the December issue of the JOURNAL. The history of medicine in Kossuth County, written by Dr. C. H. Cretzmeyer, of Algona, and the history of medicine in Sioux County, written by Dr. C. H. Murphy, of Alton, are awaiting publication.

In addition, the following eight men have promised to write the histories of medicine in their respective counties:

A. S. Bowers, M.D., Orient, Adair County
Wm. G. Egloff, M.D., Mason City, Cerro Gordo County
Paul C. Richmond, M.D., New Hampton, Chickasaw County
E. E. Munger, Jr., M.D., Spencer, Clay County
Conreid R. Harken, M.D., Osceola, Clarke County
Robert T. Spain, M.D., Conrad, Grundy County
O. L. Frank, M.D., Maquoketa, Jackson County
R. L. Whitley, M.D., Osage, Mitchell County

Death claimed two doctors before their histories were completed, and no one has been found to take up their unfinished work. They were Luther W. Little, M.D., of Atkins (Benton County), and A. A. Pace, M.D., Toledo (Tama County). The passing of those two good men makes us all the more concerned that these histories be written soon, while those who participated in the early activities are still able to compile them.

JEANNETTE DEAN-THROCKMORTON, M.D., *Chairman.*

PUBLICATIONS COMMITTEE

During 1956, the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY continued presenting the papers that had been read at the Annual Meeting, together with unsolicited manuscripts contributed by members of the Society, as room could be found for them. Because the numbers of those latter papers were increasing, the editors decided to enlarge the "Scientific Articles" section so as to include five or more papers plus a clinical pathologic conference report. But even with that expansion, a manuscript backlog accumulated, with the result that publication of papers from the April, 1957, Annual Meeting will have to be delayed considerably.

In February, 1956, the JOURNAL was glad to have the opportunity of publishing a group of scientific articles and a historical paper by Davenport doctors commemorating the centennial of the Scott County Medical Society. Similarly, in August, 1957, it will publish a considerable number of papers prepared by members of the Des Moines Library Club in honor of their senior colleague, Dr. Walter L. Bierring. Members of the Society will also be interested in learning that the SUI Clinical Pathologic Conference has indicated that hereafter it will provide the JOURNAL 12, rather than eight, reports for publication each year.

During the past year, the number of pages of advertising in our JOURNAL increased quite appreciably, and it seems probable that the present level will be maintained. But costs continued to increase, and Iowa's share in the expense incidental to the separation of the State Medical Journal Advertising Bureau from the AMA helped to prevent the Society from benefitting immediately from the greater sales of advertising.

With the advice of SMJAB, a cooperative advertising agency serving the publications of 34 state and territorial medical societies, the JOURNAL has advanced its advertising rates 15 per cent, effective for the most part in January, 1957. Since that raise was effected simultaneously with increases in the prices charged by other state journals, our rates will remain in line with those of similar publications, and now that the costs of SMJAB's reorganization have been paid, we can expect that the ratio between our JOURNAL's income and expenses will be more favorable than it has been during the past two or three years, despite the fact that it is a much bigger magazine than it used to be.

E. M. GEORGE, M.D., *Editor.*

The Speaker then called for supplemental reports. Supplemental reports were presented to the House of Delegates and referred to the proper reference committee for study.

SUPPLEMENTAL REPORT OF THE SECRETARY

(Referred to the Reference Committees on Reports of Officers and Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the reports of those reference committees.)

Among the duties of the secretary of this Society, there is an obligation to oversee the daily operation of our Society office. The secretary keeps in constant

touch with the executive secretary as well as with your officers and committee chairmen.

This is a business operation, at least in the sense that we believe that the office should be run in a business-like manner, efficiently yet economically. It should, however, be borne in mind that, despite recent increases in dues, the 2,100 dues-paying members of this Society are providing their officers less money than men with comparable responsibilities would ordinarily have available for the conduct of business operations of equal scope and importance.

Moreover, we physicians who are trying to operate this important business of ours are handicapped by the fact that we can give no more than a part of our attention to the project.

Hence, it is fortunate that we have assets other than monetary. Perhaps our most important asset is our members. If each and every one of us will make a contribution of a small part of his time and his genuine effort on behalf of his State Society, we shall seldom fail in any worthwhile objective we may attempt to achieve.

Included among our assets are a progressive Executive Council, a competent Board of Trustees, a diligent Judicial Council and an integrated system of working committees. These are the bodies that conduct the affairs of this Society during the intervals between meetings of the House of Delegates. Seldom does any officer or committee member purposely fail to attend a meeting, or fail to respond when he is asked to do a job.

We have many other assets which we employ to augment the program of Iowa Medicine. Blue Shield is one of our greatest assets. Our Woman's Auxiliary is another. Also, we have a great asset in our county medical societies. Obviously, the Iowa State Medical Society can be no stronger than its roots. It follows that one important duty of your officers is the integration of activities of county societies and the State Society.

Thus, we have put emphasis upon field work, and now have a field secretary, Mr. Gerald Buckles. Thus, also, our Legislative Committee has become even more effective than in the past, because of the improved coordination of the work of Legislative Committee members, our office staff, and legislative contact men. The field secretary has been a most important factor in this regard.

A major accomplishment during the past three years has been a reorganization and modest expansion of the operation of the Society office. We have an excellent office staff, the members of which are loyal to you. These people work hard on your behalf, and they do so willingly in close cooperation with your officers. There exists within this staff a sound attitude which we constantly foster by giving guidance and support to assignments made to the members of the staff.

Because they work for *you* in *your* Society office, I wish briefly to report to the delegates on the duties and activities of the office staff, and introduce them to you. We have 14 employees, three of whom serve Blue Shield half time. First, there is the executive secretary who is responsible for the general supervision of Society operations, and the conduct of the affairs of the House of Delegates, the Executive Council, the Board of Trustees, and all committees and all activities related to other organizations, local, state and national. The remarkable individual who has real capacity to assume such broad responsibilities is Mr. Donald L. Taylor.

Mrs. Dorothy Dolk, as assistant executive secretary, serves as office manager and staff secretary to the Legislative Committee. She is responsible for accounting and for the scientific and technical exhibits at the annual meeting.

Mrs. Hazel Lammey, executive assistant, is our membership secretary and also assists with purchasing and supply. As staff secretary to the Woman's Auxiliary, she has made a real contribution to our Society.

Miss Tina Preftakes, administrative assistant, arranges the scientific program for the annual meeting. She prepares television and radio scripts, edits health columns for WALLACE'S FARMER, and is in charge of the Speakers Bureau. In addition, she has specific committee responsibilities.

Mr. Ed Hamilton is the assistant editor of the unusually fine JOURNAL OF THE IOWA STATE MEDICAL SOCIETY. He has the major responsibility for publishing an edition of the JOURNAL each month. He also edits various speeches, articles and pamphlets, and carries out special writing assignments.

Mr. Ray Stewart is our director of public relations, serving half time with Blue Shield. He is in charge of our Society's public relations program, and is responsible for telling medicine's story to the people of Iowa, through the media of press, radio, and television particularly. He is the director and producer of the Iowa State Medical Society's television program "Medical Diary."

Mr. Wibur Quinn serves as director of professional relations for both Blue Shield and the Iowa State Medical Society. This capable man is doing an excellent job as manager of our Medicare responsibilities. He is in charge of our Placement Service. He is staff secretary to the Committee on Medical Service and all of its subcommittees, to the Public Health Committee and its subcommittees, and of the preceptor program.

Miss Maxine Lanning is our public relations assistant and serves as secretary to Mr. Stewart. She aids in all areas of public relations activities including television program production.

I have already mentioned our field secretary, Mr. Gerald Buckles, who does the general field work, with emphasis on legislation and public relations. During the past year, he worked in every county of the state and was responsible for arranging 31 district meetings. He also serves as staff secretary to the Judicial Council, the Chiropractic Committee, the Committee on National Emergency Medical Service, and the Committee on Blood Banking.

We also employ four stenographers full time, and one half-time.

Our staff handles administrative details in connection with meetings of the House of Delegates, Executive Council, Judicial Council, and Board of Trustees. During the past year, these groups met 26 times.

There are 38 committees of the Society, and 85 committee meetings were held this year. In addition, many informal meetings and conferences between staff members, and various Society officers and committee members were held.

In connection with formal meetings of the Society, it required staff time to announce the meetings, arrange hotel accommodations and meals, to prepare agendas, to record minutes, and, most important, to follow through with the correspondence and development of projects resulting from various meetings.

One of the major projects of our Society—perhaps the one requiring the greatest amount of staff time—is the annual meeting. The numerous arrangements for our annual meeting include hotel accommodations, meeting places, special luncheons and dinners, special events, two and one-half days of scientific lectures, scientific and technical exhibits, meetings of the House of Delegates, and meetings of reference committees.

Recently all members of this Society were provided a summary of these activities since the last annual meeting. I hope that, if you have not already done so, you will take time to read this report.

In summary, our broad objectives and our major efforts are bent in the direction of forming a better Iowa State Medical Society by having an effective, cooperative office force, a working group of committee members and officers, and better coordination of the activities of Iowa physicians at county, state and national levels.

We have reached the point where careful planning of future activities of this Society must be faced up to as a long range project. There are many things that seem worth doing, yet, for purposes of both economy and efficiency, it would seem essential that a planning group make an effort to weight or evaluate various projects and activities, indicate where we may best spend our time and our money, and, incidentally, indicate where we may save some of our time and some of our money.

Recently, the Board of Trustees has recommended appointment of a Plan and Scope Committee composed of certain officers and committee chairmen. We hope that the Committee will come up with some valuable recommendations.

In closing, I should like to report on a very important matter. The Board of Trustees has completed negotiations with the Blue Shield Board for establishment of a permanent basis for effective, cooperative integration of the Blue Shield program with the policies and objectives of the Iowa State Medical Society. We were pleased by the cooperative attitude with which our suggestions were received by the Blue Shield Board, and can report that our negotiations were completely successful.

As a result, Iowa physicians may be confident that Blue Shield will always truly represent their interests. It is *our* Blue Shield, and its program will be just as effective as we care to make it.

Under the new arrangement, each district will have a representative on the Blue Shield Board elected by the physicians of that district. Nominations of candidates for the Blue Shield Board of Directors are developed, with the aid and advice of ISMS Councilors, by a Liaison Committee. Three of the six members of this Liaison Committee are members of the ISMS Board of Trustees.

Under the new arrangement, three members of the "official family" of the ISMS (officers and standing committee chairmen) serve on the Blue Shield Board, and one also serves as a member of the Blue Shield Executive Committee.

Moreover, two members of the Blue Shield Board sit with this House and serve on our Executive Council where they are available to tell us of Blue Shield's problems and to receive our suggestions.

Blue Shield and the Iowa State Medical Society remain legal entities, yet the framework of our new relationship is such that we are united and fully able to carry out our mutual objectives.

R. F. BIRGE, M.D.

SUPPLEMENTAL REPORT OF THE BOARD OF TRUSTEES

(Referred to the Reference Committee on Reports of Officers for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

The reports which appear in the Handbook, the summary of Medical Society activities which was sent to all members, and the supplemental reports presented before this House of Delegates combine to provide full information on Iowa State Medical Society operations since the last Annual Meeting. Thus, I shall not bore you with further details. My remarks will be confined to the financial aspects of State Society business.

For at least ten years, organized medicine at every level has been engaged in accelerated programs, and our State Medical Society is no exception. The ISMS has been exceptional only in that for the past three or four years it has been involved in settling the problem of hospital-physician relations. Its efforts were important not just to Iowa, but to the nation as well, for unquestionably the solution to the Iowa problem paves the way for other states to develop similar arrangements.

Your Board of Trustees is first to admit that achieving the Society's objectives as regards physician-hospital relations was expensive and tremendously time-consuming. But, the Board is also convinced that the results justify the expenditure of the money and effort. As reported in the Handbook, Iowa physicians now for the first time have a legal settlement of what constitutes proper doctor-hospital relations.

Because of contributions totaling over $50,000 from pathologists, radiologists, and other physicians throughout the country, the Society was able to close the year of 1956 in the black. Completely aside from the hospital-physician controversy and the expenses incident thereto, the income from dues almost exactly underwrote the Society's costs of operation in 1956.

Speaking for the Board of Trustees, we ask the House of Delegates for authority to set the dues at $85 again in 1958. We are making this request for at least one more year so that we may have time for a realistic analysis of the Society's finances. We should like to conduct a year's business under reasonably normal conditions in order to determine what it actually costs to carry out the necessary and essential functions of the State Society. Incidentally, the $10 of the dues now allocated for the student loan fund will be discontinued after 1959. You will recall that when the House of Delegates voted to assess each member $10 for the student loan fund it was limited to five years. As an additional reason for continuing the dues at their present level, we believe it is essential to replenish the Society's bond reserve to at least $60,000. We are presently $20,000 short of that total.

The Board of Trustees has spent a great amount of time trying to decide where some of the expenses might be curtailed, but as of this moment there is no area in which such curtailment seems to be advisable. We intend to make a thorough study of our PR and television activity.

As you know, the work of the State Society has changed and increased drastically during the past

decade. We no longer have a mediocre organization, but a top-flight Medical Society that receives its share of recognition and respect, not only from othe organizations in the state, but from national organizations as well.

At the AMA Annual Meeting which will be held in New York in June, Dr. R. N. Larimer will serve as chairman of the reference committee of Reports of Officers; Dr. D. F. Ward as a member of the reference committee on Medical Military Affairs; and Dr. F. C. Coleman on the reference committee on Hygiene, Public Health and Industrial Health. As you know, Dr. Coleman is a member of the Legislative Committee of the AMA. Dr. Conzett is a member of the Committee on Federal Medical Services. Mr. Don Taylor, our Executive Secretary, is a member of the AMA Public Relations Advisory Committee.

If you men have read all the information that has been made available on Society work, then I'm sure you must agree with us in thinking it amazing that such a volume of activity could have been carried out on the funds and with the limited staff of the State Society. It is well to remember that the estimated gross income to all of the medical profession in Iowa totals approximately 57 million dollars per year, and that the business of the Society is conducted at a cost of approximately $150,000 to $160,000. Thus, State Society activities cost no more than 4/10 of 1 per cent of the earnings of Iowa physicians. Stating it differently, it costs less than a package of cigarettes per day for a doctor to be a member of his county society, his state society, and the AMA.

I have been a member of the Society for many years, and I know what I get for my money. It is my personal opinion that what a doctor pays in Medical Society dues and what he receives in return represent a real investment. Your State Society is indeed engaged in big business, and there is no way for it to avoid doing so. If any of you have suggestions as to how it can reduce its over-all operation and still continue to be an effective and potent force, we should like to have your recommendations. The members of your Board of Trustees have made an honest attempt to apply their best business judgment in carrying out the affairs of the Society. We try to be conservative with your dollars because they are our dollars as well.

We members of the Board of Trustees will be available to the Reference Committee on Reports of Officers, and we shall welcome the opportunity to discuss the business affairs of the Society and to receive any of your suggestions.

Mr. Speaker, I should like the permission of the House of Delegates to have Mr. Bob Throckmorton, legislative counsel for the Iowa State Medical Society, appear before the House very briefly to discuss some of the problems that remain to be solved in connection with hospital-physicians relations.

G. H. Scanlon, M.D., *Chairman.*

Supplemental Reports of Standing Committees

COMMITTEE ON LEGISLATION

(Referred to the Reference Committees on Legislation and Public Relations and Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the reports of the reference committees.)

This Supplemental Report of the Committee on Legislation is divided into three sections.

LEGISLATION AT THE STATE LEVEL

The 57th General Assembly has been an active one, as demonstrated by the fact that the Legislature is still in session. There were approximately 113 health bills introduced during the session that have been followed by the Legislative Committee. A few of these will be called to your attention.

A. *The Physician-Hospital Bill (House File 21).* This bill was joinly sponsored by the Iowa State Medical Society and the Iowa Hospital Association to implement the Joint Declaration of November, 1956, that ended the physician-hospital controversy. This bill was signed by the Governor on April 5.

B. *Foreign Trained Physicians and License Revocation (Senate File 466).* This bill was prompted by a shortage of psychiatrists to staff the mental health institutes in Iowa and came to the attention of the Legislature because the Board of Control turned back $1,000,000 of funds unexpended because of the lack of medical personnel.

A bill was, therefore, drafted at the request of the Appropriations Committee that would make it possible for foreign-trained physicians to become eligible for medical licensure examinations after serving three years of residency, including residencies in the mental health institutions and one year of approved internship.

The bill also contained a section giving the Board of Medical Examiners authority to conduct hearings in cases of suspected illegal practice and to revoke licenses if adequate grounds for revocations exist. Judicial review of their actions was provided for in the bill.

It was passed by the Legislature on April 23.

C. *Mental Health Bills.* Several bills having to do with mental health were introduced in this session. They key bill (H.F. 181) would create the position of Director of Mental Health, who would be responsible for supervising the mental health institutions in Iowa. This bill passed the House of Representatives on April 23, but has not yet been considered by the Senate. It would appear now that the bill will not pass the Senate.

The shortage of psychiatrists in the mental health institutions is a matter of grave concern to the members of the Legislature, and they are looking to the Iowa State Medical Society for help in solving this problem.

LEGISLATION AT THE NATIONAL LEVEL

When Congress convened in January of this year, a flood of health bills was introduced. At the present time, there are more than 500 health bills under consideration. I shall call your attention to a few of them.

A. *Hospitalization for the Aged, Dependents and Survivors (H.R. 1092).* This bill would provide that expenses of hospitalization for all recipients of Social Security benefits would be paid from Social Security trust funds to the hospital performing the services. At the present time, more than 9,000,000 persons are receiving Social Security benefits. This bill is now before the Ways and Means Committee of the House.

B. *Social Security Amendments Regarding Disability*

Benefits (S. 173). This bill would eliminate the requirement that an individual must be 50 years of age in order to be eligible for disability benefits from the Social Security program. This bill has been referred to the Finance Committee of the Senate.

C. *Expansion of the Medicare Program (H.R. 3208).* This bill would expand the Medicare program to include certain retired members of the uniformed services on the same basis as dependents of members of the uniformed services. This bill is currently before the Armed Services Committee of the House of Representatives.

D. *National Compulsory Health Insurance (S. 844).* This bill would provide for a program of National compulsory health insurance administered by the government. It is the modern version of the original Wagner-Murray-Dingell bill. The program would be financed from a Personal Health Services Act with sums equal to 3 per cent of wages up to $6,000 annually, plus 1 per cent of the total of such wages to be paid from the U. S. Treasury. This bill is now before the Committee on Labor and Public Welfare of the Senate.

E. *Increase in Wage Base and Tax Under Social Security (H.R. 5549).* This bill would raise the base upon which contributions are computed for the Social Security program from $4,200 to $6,000. In addition, the contribution rate would be raised in the case of employees and employers from the present 2¼ per cent each to 3 per cent each. If this bill were enacted, by 1975 employees and employers would pay 5 per cent on a $6,000 wage base. By 1975, a self employed person would be paying a rate of 7½ per cent on a $6,000 wage base. That bill has been referred to the House Ways and Means Committee.

F. *Budget for the Department of Health, Education and Welfare.* The budget for the Department of Health, Education and Welfare would be increased under the administration's budget submitted to Congress by 23 per cent, to a total of $3,070,000,000.

G. *Jenkins-Keogh Bills (H.R. 9 and 10).* These bills are generally similar to those of the past Congress in providing for retirement income on a tax deferred basis. The American Bar Association has set as its 1957 goal the passage of this legislation. An American Thrift Assembly has been organized, with several groups including lawyers, dentists and doctors as members, to push this legislation.

H. *Poll of Doctors Regarding Inclusion of Physicians Under Social Security.* Your ISMS Legislative Committee is in the process of conducting a poll of Iowa doctors to determine their attitude on this legislation. Questionnaires are being returned in considerable numbers, and we shall be able to tabulate them in the very near future.

THE LEGISLATIVE SIGNIFICANCE OF BLUE SHIELD

The third portion of this report will be concerned with a discussion of Blue Shield and its legislative significance to the members of the Iowa State Medical Society. It is presented because one of the obligations of the Committee on Legislation, as set forth in the Articles of Incorporation and By-Laws of the Iowa State Medical Society, is to "keep in touch with professional and public opinion, endeavor to shape legislation so as to secure the best results for the whole people, and utilize every organized influence of the profession to promote the general influence on local and state affairs and elections. It shall have the authority to be heard before the entire Society upon questions of great concern."

Our Blue Shield program is a matter of great concern to the Committee on Legislation because, in conversations with the Representatives and Senators from Iowa and with the members of the Iowa Legislature, we have been asked repeatedly what the physicians are doing to improve and expand the Blue Shield program. The statement has been made repeatedly by members of Congress that "Blue Shield is the best weapon you doctors have against socialized medicine."

Congressmen and legislators are very sensitive to changing patterns in society. Some of these patterns are changing at a frightening rate. As Professor Carleton, of the University of Florida, put it, "Modern machine technology has created societies of bigness. There is big business, big government, big organization everywhere. . . . Increasingly, we live in a society of mass production, mass standards and mass man. . . . Decision-making is based less and less on personal experience, and more and more on circumstances and conditions that are remote and impersonal. . . . Man is becoming 'the other directed' man. . . . Modern trends possess undeniable threats to liberty."

The members of your Committee on Legislation are firmly convinced that Blue Shield is our greatest protection against the threats to the professional liberty of the physician.

1. *Reasons for Organization of Blue Shield.* Blue Shield was organized in Iowa in 1944 by the Iowa State Medical Society, and the first contracts were offered in 1945.

The primary reason for its organization was to protect the doctors against compulsory health insurance. It is very significant that Dr. R. D. Bernard and Dr. John Billingsley, both of whom have occupied the position of Chairman of the Legislative Committee, were prominent among the founders of Blue Shield. They knew as well as anyone else the need for some form of prepayment plan to quiet the demands of the public for governmental health insurance.

The founders of Blue Shield had the welfare of the public in mind, of course, but this attitude was secondary to the one of preserving the private practice of medicine.

2. *Complacency Can Be Disastrous.* Blue Shield and the active AMA legislative program directed by Whitaker and Baxter were successful in defeating compulsory health insurance. The danger seemed to have passed, and complacency set in. Social trends were developing on the drawing boards of social planners, however, that boded no good for the private physician. Several years usually elapse between the drawing of blueprints for such plans and the appearance of the finished product. We are now beginning to see some of the finished products.

Complacency in other countries such as Britain and Sweden resulted in the socialization of medicine. We can't let it happen here!

3. *The Nation's Health Dollar.* One of the startling changes in the last 12 years is the amount of money spent for health care. In 1956, this amounted to almost 11 billion dollars. Four billion of this amount came from governmental sources; 3.3 billions was spent by private individuals from their own pockets; 2.1 billions came through commercial insurance carriers; one

billion was spent through Blue Cross and 0.4 billion through Blue Shield. Twelve years ago, most of the cost of medical care came from the pocket of the private individual. Prepayment insurance now pays for more than 50 per cent of private health care.

4. *Threats to the Private Practice of Medicine.* When Blue Shield was organized in 1944, compulsory health insurance was the greatest threat to the private practice of medicine. In the intervening 12 years, we have seen the development of the Kaiser Health Foundation, the Health Insurance Plan of Greater New York, the United Mine Workers' Program, Union Health Centers, Expansion of the Veterans Administration, the Medicare Program and, more recently, the Community Health Association of Detroit and the offering of health care as a fringe benefit.

5. *The Present Wagner-Murray-Dingell Bill.* The story is told of a recent visitor to the office of Congressman Dingell of Michigan, the son of the original Congressman Dingell of the Wagner-Murray-Dingell Bill, who noticed that Congressman Dingell was clipping out large portions from a rather tattered legislative bill. When asked what he was doing, Congressman Dingell stated that he was cutting out those portions of the original bill that had been passed piece-meal so that he could introduce a modern version of it.

It is startling to note that roughly one-third of the original bill has been passed a bit at a time during the past 12 years.

6. *A Patient's Reaction to Blue Cross vs. Blue Shield Contracts.* When Blue Shield was organized, it provided for service contracts with an income limit of $2,500 which were designed to provide coverage for catastrophic illness for low-income groups.

The attitude of the public towards what it wants in prepayment health care has changed a great deal in the past 12 years. Now, the public is interested in full service, and the public is sure to get what it wants. One of the complicating factors in Iowa has been the introduction by Blue Cross of comprehensive contracts. In fact, more than half of its contracts are now of the comprehensive type.

When a patient leaves the hospital, his hospital bill is paid in full; but when he receives his doctor bill, he finds that he has an indemnity contract if he makes more than $3,600. His reaction is frequently one of violent criticism of the medical profession.

It has been stated that the present Blue Shield program is the worst public relations program that the doctors have in Iowa. There is undoubtedly some truth to this statement. Why full service? Because the patient does not want an additional bill.

7. *Community Health Association of Detroit.* The most recent addition to the experiments in the health field has been the development of the Community Health Association of Detroit by the United Automobile Workers under the direction of their president, Mr. Walter Reuther. This Community Health Association is "a voluntary, non-governmental, non-profit, membership association for the purpose of making available to the community a medical care program that is economically sound, socially responsible and founded on the highest precepts of modern medicine."

The method by which medical care is to be rendered under this program has not yet been spelled out. It is interesting to note, however, that participation in the Association is open to all citizens of the Detroit area and that the Board of Directors includes representatives of various religious groups that are interested in the operation of hospitals. Since all hospitals have medical staffs, the inference is clear that there will be a close relationship between the hospitals and the medical staffs in the development of a single package of health care. It is also interesting to note that there is no doctor on the Board of Directors of the Community Health Association.

8. *Health Care as a Fringe Benefit.* A revolutionary change in the socio-economic pattern of the American public in the past 12 years has been the development of the concept of health care as a fringe benefit. If an employee has health care as a fringe benefit, he receives this health care as a basic part of his compensation. The employer may pay all or part of the cost of his health care. If the employee pays a part of the cost, his contribution is usually made by payroll deduction, and the employee never actually sees the money that he contributes. In either case, the employee is freed from the feeling of personal responsibility for his health care. This lack of personal responsibility intensifies the desire for full service.

At the present time, 10 per cent of all prepayment insurance premiums through group participation are paid in full by the employer and 49 per cent are paid in part by the employer.

9. *Employment Statistics as to Employees and the Self-Employed.* Figures on the number of employees as compared to the number of the self-employed are available only through the 1950 census report. These figures indicate, however, that six out of every seven wage earners are working for somebody else. Iowa figures indicate a slightly higher percentage of self-employed than is the general average but, even in Iowa, three out of four wage earners are working for somebody else. There are now some 64 million wage earners in the United States, and the relative proportion of employees to the self-employed is estimated to be about the same.

10. *Methods of Providing Health Care as a Fringe Benefit.* If a company wishes to provide health care as a fringe benefit, there are three methods by which it can do so. The company can employ a doctor who will take care of regular health needs of the employees, as has been done for so many years in certain mining areas. The company can ask a commercial insurance carrier to write a health contract, or the employer can obtain a contract through a prepayment plan such as Blue Shield. There is no indication that employment of doctors for this purpose is being seriously considered.

11. *Do Commercial Carriers Ask Medicine's Advice in Developing Their Contracts?* Commercial insurance companies are under the direction of boards of directors. These boards do not consult with the county or state medical societies in developing the provisions of their contracts. Thus, the doctor has nothing to say about the provisions of the contract written by the commercial carrier.

12. *Commercial Carriers' Method of Making Their Contracts Full Service Contracts.* If the employer and the employees select a commercial carrier to develop the fringe benefit, the employer is interested in knowing how much the premium will be for this contract, and the employee is interested in knowing whether it is full service, or not. The carrier must have a fee schedule in order to compute his premium rate. The employees must know whether the doctor will accept the fee schedule as full service coverage payment.

The commercial carrier, therefore, sends out a representative to poll the doctors in a community to find out which ones will accept the proposed fee schedule as full payment and which ones will not accept it as such.

The experience with this technic would indicate that as many as 50 per cent of the doctors in a community will accept such a fee schedule as full payment, provided the fee schedule is generally representative of the fees charged in the community.

It has been said that all doctors have to do to protect themselves is to stand together. This technic of approaching the doctors individually makes it impossible for them to stand together. In problems like this, Medicine should speak with one voice.

The experience of the medical society in Akron, Ohio, when it was confronted with this problem, was that the doctors split into two groups, and these groups spent more time fighting each other than was spent in fighting the third-party interference in medical care.

The use of the "divide and conquer" technic is almost as old as civilization. If doctors can't find some way to speak with one voice, their future looks bleak.

13. *Labor and Management Negotiate for Health Care as a Fringe Benefit.* When health care is offered as a fringe benefit, then it becomes a matter of negotiation between the employer and the employees. Unless some way can be found for the doctor to be represented in these negotiations, he is on the outside looking in while his services are being bargained for.

14. *Blue Shield Can Be the Voice of Medicine at the Bargaining Table.* If the doctors in a community can unite with a single bargaining agent, they have a voice at the conference table. Blue Shield, if it is sensitive to the needs of the doctors and if it has the support of the doctors, can provide this single voice.

For Blue Shield to fill this role, its Board must be representative of the doctors, and it must be peculiarly sensitive to the needs of the doctors. This requires a very close relationship with the State Medical Society. Differences within the profession can be settled in the State Medical Society and Blue Shield can serve as the spokesman for the doctors as a group.

As we see it from a legislative standpoint, the greatest need of doctors today is the need for unity.

15. *Blue Shield Must Offer What the Patient Will Buy.* The American people seem to decide for themselves what they will and will not buy. Blue Shield, for example, can offer the most utopian contract possible from a doctor's viewpoint but if the patient won't buy it, then Blue Shield isn't doing anybody any good. Public acceptance of any insurance contract is dependent upon two factors—the terms of the contract and the premium cost. Blue Shield has to find out what the subscriber will buy.

16. *Population Trends in Iowa.* Iowa has always been regarded as a rural state, but changes are taking place. If the people living in towns of 2,500 or more are counted as urban, and if those in communities of less than 2,500 are listed as rural, we find that 1,400,000 Iowans live in urban areas and 1,200,000 live in rural areas. Most of the doctors are located in urban areas.

Another population trend in Iowa has been the increase in the number of older people. At the present time, one out of every nine people in Iowa is 65 years of age or older. Think of it—that is 11 per cent of our population.

17. *Relative Numbers of White Collar Workers, Farm Bureau Members and Members of Organized Labor.* The transfer of people from the farm to the city has brought about some startling changes in the wage-earner groups. In 1957, the Iowa Farm Bureau Federation has approximately 130,000 members; organized labor groups have 150,000 members; and there are 187,000 white collar workers. These 187,000 white collar workers are made up for the most part of employees. The A.F.L.-C.I.O. has now set as its major goal the organization of white collar workers. It expects to organize some 12 million of them within the next few years.

Workers in the health field are among the first on their list. For example, the A.F.L.-C.I.O. held an organizational meeting in Washington within the past month for medical technologists, x-ray technicians, nurses, and nurses' aides. Over 500 people attended the organizational meeting. Meetings are planned for the very near future in other cities such as Chicago.

18. *Some Would Like the Government to Care for the Geriatric Patient.* Legislation is currently before Congress which would enable the government to provide hospitalization for recipients of Social Security through direct payment by the government to hospitals. Twenty years from now, there will be 21 million of these people over 65 years of age.

Present legislation makes no reference to medical care. If the government provides hospitalization in addition to their Social Security payments, it is a foregone conclusion that the government will also pay the doctor bill. Iowa has more people over 65, percentage-wise, than any other state.

Blue Shield can be the research laboratory to work out a solution to this problem of financing medical care for the aged. I don't know how it can be done, but I am sure that it must be done.

19. *Diagnostic Patient Coverage.* A demand for diagnostic services has produced the union health center. Thus, another problem for the research laboratory of Blue Shield is the development of a plan for diagnostic coverage for the ambulatory patient; such coverage would reduce the cost of health care, reduce the crowding of hospitals, and would keep the patient where an ambulatory patient belongs—in the private office of the doctor, not in the community health center or the outpatient department of the hospital.

20. *National Enrollment Problem.* Another problem for Blue Shield is that of national enrollment. Large corporations are getting larger; more companies are operating in states throughout the nation. With the development of the concept of industry-wide collective bargaining, including fringe benefits, both the employer and the employees insist upon uniformity of health coverage.

The Blue Shield Commission has been trying to work out a solution, but the problem is far from solved. The present income-level contract that seems to fit into this national enrollment problem is somewhere in the neighborhood of $6,000.

21. *Fee Committee for Blue Sky Contracts.* A very important problem for Blue Shield research is in the development of a "no fee schedule" contract. From the standpoint of the doctor, this is the most desirable of prepayment contracts. Wisconsin has been experimenting with such a "blue sky" contract for several years.

Frequently it is not understood, however, that such "blue sky" contracts require the close cooperation of organized medicine at the local level. The Wisconsin Blue Shield for example, has asked each county medi-

cal society to set up a fee committee, which reviews all fees that seem to be out of line. It is this cooperation between Blue Shield and the county medical society that has made the program successful so far.

22. *Blue Shield Does Not Have a Monopoly in the Medical Prepayment Field.* Although Blue Shield was the pioneer in the prepayment medical field, it has far from a monopoly. Over 90 million people in the United States have medical-surgical coverage. Fifty-one million of these have coverage with commercial carriers.

23. *Income Levels of Iowans—1945 vs. 1956.* When Blue Shield was offered to the public in 1945, approximately 60 per cent of the wage earners in Iowa had incomes of $2,500 or less, 34 per cent had incomes of $1,500 or less and 26 per cent had incomes between $1,500 and $2,500.

In 1956, 60 per cent of the wage earners had incomes of $6,000 or less.

Thus, the same relative proportion of the population in 1957 would be eligible for Blue Shield full service contracts at a $6,000 level as were eligible for Blue Shield service contracts in 1945 at the $2,500 income level.

24. *Diminishing Growth of Blue Cross and Blue Shield.* The feeling has been expressed that Blue Shield might eventually cover all of the people in Iowa. The growth curve of both Blue Cross and Blue Shield does not substantiate this belief.

Blue Cross was organized about five years prior to Blue Shield. Its early growth was very rapid but in later years, it has slowed so that the curve is now levelling off. Roughly, 25 per cent of the population are now covered by Blue Cross, and this figure is not likely to increase rapidly.

Blue Shield's experience has been the same. In its early years, its growth was very rapid. Its curve is now beginning to level off in about the same manner as that of Blue Cross.

25. *The 72 Blue Shield Plans According to Type of Contract and Enrollment.* There are 72 Blue Shield plans. Of these, 47 operate on a service basis with a total enrollment of 27 million subscribers. Seventeen plans operate on an indemnity basis with nine million subscribers, and there are seven foreign plans and one medical indemnity plan with a much smaller number of subscribers.

26. *Income Limits and Enrollment in the 47 Blue Shield Service Plans.* Of the 47 Blue Shield plans operating on a service basis, six have income limits of $3,600 or less and their enrollment is approximately 1½ million subscribers. Twenty plans have income limits of $6,000 or over and these cover 15 million people. There are 21 plans with intermediate income limits ranging from $4,000 to $5,500. These plans have approximately 11 million subscribers.

27. *The Deductible Principle.* One of the concerns of doctors about the full service principle is the abuse of the coverage by the subscriber. This has been demonstrated by experiences with the Blue Cross comprehensive contract. It has been suggested that the deductible principle might be applied to Blue Shield contracts to eliminate abuse.

The deductible principle will undoubtedly limit utilization. It cannot eliminate, however, the need for determining total liability of the insurance carrier.

If a driver wrecks his automobile and he has a $50 deductible policy, the driver pays the first $50 and the insurance company pays the remainder of the repair bill. The insurance company controls its total liability, however, by requiring the driver to obtain three bids from three different repair companies, and the insurance company reserves the right to designate the company that will do the repair work.

If this principle is adapted to Blue Shield, there will also be a control of total liability.

28. *The Co-Insurance Principle.* The co-insurance principle can also be applied to Blue Shield just as it has been applied to automobile insurance. If a driver wrecks his automobile and he has a co-insurance contract, he pays a certain per cent of the total cost, and the insurance company pays the remainder. A popular contract in the automobile insurance field calls for the driver to pay the first 20 per cent of the repair costs up to $250 with the insurance company paying 80 per cent of the cost up to $250, and all of the cost above this amount.

The same rules are usually applied, however, for obtaining bids and the right of the insurance company to designate the repair shop. Thus, under the co-insurance plan, maximum liability is also controlled.

29. *Composition of the Blue Shield Board.* Some physicians in Iowa do not regard Blue Shield as *their* plan, even though Blue Shield in Iowa was created by the Iowa State Medical Society. There is justification for this feeling, for over the years Blue Shield and the Iowa State Medical Society have drifted apart. They are now getting together again, however, and if the doctors wish it, the relationship can be a very intimate one.

For example, at the present time, 18 members of the Blue Shield Board are physicians, with only six members being non-physicians. These 18 physicians are chosen so that there is a doctor representing each councilor district, three doctors are chosen at large, three are appointed by the Iowa State Medical Society and one by the Sioux City Blue Cross Plan.

Under an amendment to the Blue Shield Articles of Incorporation, to be considered tomorrow night, each doctor in a councilor district will have the opportunity to vote by mail ballot on the Blue Shield board member from his district. Members-at-large are selected at the annual Blue Shield meeting, where all participating physicians have the right to vote.

The Blue Shield Board has to be sensitive to the needs and wishes of Iowa doctors.

30. *If Blue Shield Is Another Indemnity Company, It Should Get Out of Business.* Blue Shield has always been a research laboratory for developing new methods of paying for medical care. The main distinguishing feature between Blue Shield and commercial companies has been the service principle. There can be numerous variations of the service principle such as no fee schedule contracts, co-insurance, or deductible features.

If it is to become another indemnity company like the 500 commercial carriers, then there is no special reason for doctors to be in the insurance business. But the commercial carriers are not coming up with solutions to the fringe benefit problem, the old age problem and others so vital to the doctors.

31. *Keep Pace or Fail!* Doctors seem to have more people trying to run their business for them than any other group. There is no indication that this problem will disappear. If the doctors don't protect themselves, it is certain that no one else will. Blue Shield, as we see it, can be the best protection for the medical pro-

fession. By recognizing changing attitudes of the public and working out solutions to problems created by them, we should be able to protect the private practice of medicine.

This concludes the third portion of this Report.

On behalf of the Committee on Legislation, I wish to express our appreciation to the physicians of Iowa, and particularly to the Legislative Contact Men, for the interest and support shown in our legislative program during the past year.

We also wish to express our appreciation particularly to the members of the executive staff of the Iowa State Medical Society for the many hours of over-time work which they put in to protect the interests of Iowa doctors in the Legislature and in Congress. I wish to call attention particularly to the work of Mr. Donald Taylor, Mrs. Dorothy Dolk, Mr. Wilbur Quinn and Mr. Ged Buckles.

Special recognition is in order for the work of Mr. Robert Throckmorton as the legal counsel for the Committee on Legislation. His work has been a credit to the medical profession.

Lastly, as chairman of the Committee on Legislation, I wish to thank the members of the Committee for their regular attendance at the many, many committee meetings that were held during this past year.

F. C. COLEMAN, M.D., *Chairman.*

COMMITTEE ON ARTICLES OF INCORPORATION AND BY-LAWS

(Referred to the Reference Committee on Articles of Incorporation for study and recommendation. For final action by the House of Delegates, see the report of the reference Committee.)

1. SECRETARY AS MEMBER OF COMMITTEES

Amend Article IV, Section 10 by adding the following new sentence after "Treasurer" in line 8:

"He shall be an ex-officio member of all committees of the Society but shall not have the right to vote in such committees unless such right is conferred by other provisions of the Articles or By-Laws."

2. MULTIPLE COUNTY SOCIETIES

(a) *Amend Chapter III, Section 3* to read as follows:

"Each component society which has made its annual report and paid its dues shall be entitled to send one delegate from each county within the component society to represent it in the House of Delegates of this Society. Each component society which represents an individual county only and which has more than twenty-five active or life members in good standing as of the close of the preceding calendar year shall be entitled to send one additional delegate for each such additional twenty-five active or life members in good standing (or major fraction thereof). Each component society which represents two or more adjoining counties and which has more than twenty-five active or life members in good standing from any county as of the close of the preceding calendar year shall be entitled to send one additional delegate for each such additional twenty-five active or life members in good standing (or major fraction thereof) residing in such county. In case any delegate," etc.

(b) *Amend Chapter IX, Section 10* by substituting the following in lieu of second sentence:

"Each component society which represents an individual county only and which has more than twenty-five active or life members in good standing as of the close of the preceding calendar year shall be entitled to elect one additional delegate and one alternate delegate for each such additional twenty-five active or life members in good standing (or major fraction thereof). Each component society which represents two or more adjoining counties and which has more than twenty-five active or life members in good standing from any county as of the close of the preceding calendar year shall be entitled to elect one additional delegate and one alternate delegate for each such additional twenty-five active or life members in good standing (or major fraction thereof) residing in such county."

3. RESIDENT PHYSICIANS

(a) *Amend Chapter I, Section 1* to read:

"Membership in the Iowa State Medical Society shall consist of Active, Life and Associate members as defined by Article III of the Articles of Incorporation, and also of Resident Physicians members. Resident physician membership in this Society shall consist of those physicians licensed in Iowa to practice medicine and surgery as Resident Physicians, who hold a degree of Doctor of Medicine or Bachelor of Medicine, who are members in good standing of the component medical Societies, who have been so certified to the headquarters of this Society and who have been approved by the Judicial Council. They shall not have the right to vote nor to hold office. The official roster," etc.

(b) *Amend Article III, Section 1* so last sentence reads:

"licensed to practice medicine or to practice as a resident physician in Iowa."

4. BLUE SHIELD

(a) *Amend Chapter V, Section 1,* so that name of standing committee "Blue Shield Liaison Committee" is changed to "Liaison Committee."

(b) *Amend Chapter V, Section 18,* to read as follows:

"The Liaison Committee shall consist of three or more members all of whom shall be appointed by the President with the advice and consent of the three Trustees and at least three of whom shall be members of the Board of Trustees. It shall be the duty of the Committee to establish cordial relationships with other organizations in this State for the purpose of achieving the purposes and objects of the Society."

(c) *Amend the By-Laws by adding the following new Chapter:*

"*Chapter XIII, Delegates-at-Large.* As soon as practicable after the adjournment of the annual meeting, the Liaison Committee shall submit to the Executive Council nominations of two or more active or life members of this Society in good standing for the preceding five years and from the names so submitted the Executive Council shall elect two Delegates-at-Large to serve as members of the House of Delegates and of the Executive Council as provided in the Articles of Incorporation. Delegates-at-Large shall serve for a term of one year and until their successors shall have been elected. A vacancy in the office of the Delegate-at-Large shall be filled by the Executive Council from the nomination, submitted by the Liaison Committee, of one or more active or life members of this Society in good standing for the preceding five years.

(d) *Amend Article IV, Section 16,* so the first sentence will read as follows:

"The Executive Council shall consist of the Councilors, the Trustees, the delegates to the American Medical Association, the President, the President-Elect, the Vice President, the Speaker of the House of Delegates, the Secretary and the Treasurer of the Society, and two Delegates-at-Large elected as the By-Laws may provide."

(e) *Amend Article VI, Section 1,* so the fourth sentence will read as follows:

"The House of Delegates shall be composed of two Delegates-at-Large elected as the By-Laws may provide, and delegates or their alternates elected by the component societies in proportion to their membership as the By-Laws may provide.

5. LIFE MEMBERS

(a) *Amend Article III, Section 3,* by adding the following at the end of the first sentence:

"providing his county medical society votes to present his name for such life membership in the State Society."

6. NOMINATIONS

(a) *Amend Chapter IV, Section 2,* by striking the last two sentences thereof and inserting in lieu thereof the following:

"One such meeting shall be held at a time and place designated by the Speaker of the House of Delegates, which meeting shall be open to all members in good standing of this Society. On or before noon of the day preceding the last day of the annual meeting, the committee shall report the result of its deliberations to the members in attendance at the annual meeting in the shape of a ticket containing the names of two or more members for the office of President-Elect and one or more members for each of the other offices to be filled at that annual election. Two candidates for President-Elect shall not be named from the same county."

A. B. Phillips, M.D., *Chairman.*

COMMITTEE ON MEDICAL SERVICE

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

This year about 110,000 Americans—nearly 70 per cent of the population—have some form of voluntary health insurance. This 70 per cent figure is associated with hospitalization insurance, whereas, 56 per cent have surgical insurance and 35 per cent have some limited medical insurance coverage.

The total health bill of our nation is near the $11 billion figure, with commercial insurance carriers paying $2.1 billion last year and the "Blue Plans" paying slightly more than $1.4 billion. So only about one-third of the total health care bill is now paid by the voluntary health insurance movement in the United States.

Of the proposed $72 billion Eisenhower budget for the next fiscal year, $13.7 billion is requested for health and welfare benefits. Of this amount nearly $4 billion is earmarked for health benefits, or more than was paid in 1956 by the entire private insurance industry including Blue Cross and Blue Shield Plans.

Blue Shield was founded a little more than a decade ago to meet the threat of government compulsory health insurance. If we needed it then, the need is many times more urgent now in our battle to preserve the free practice of medicine.

Times have changed rapidly since Blue Shield was founded in 1945. Population is increasing at a rapid rate. In 1949 our population was 150 millions, today it is 170 millions, and in ten more years it is predicted that the census count will be 200 million.

Since 1942, industrial production in Iowa has quadrupled. In 1950 the total dollars received by industry surpassed those received by agriculture for the first time in Iowa's history. People now employed in Iowa manufacturing firms alone earn more than $700 million each year. We now have 3,750 manufacturing enterprises.

Statistics reveal that our state has 192,933 farms, but of the people on farms, 61,000 are working at part-time non-farm jobs.

I cite these few examples to illustrate our changing times. As you all know, our economy has undergone substantial changes, too. Businesses are merging with other corporations of similar interests. Unions are joining forces in their struggle to compete with management. In the early years of Blue Cross and Blue Shield, it was possible to sell coverage to branch houses or divisions of large corporations. Government employees were enrolled, post office by post office; railroad workers were enrolled terminal point by terminal point. Those days are rapidly disappearing in our changing times. Large corporations are bargaining for nationwide health plans for all their employees under one package. The railroad unions are now beginning to negotiate on a national health package for all employees. Formal negotiations begin September 1. Government workers are now negotiating for a national coverage plan. About three-fourths of the families who now have some form of health insurance joined their insurance plan through enrollment in a group, and 10 per cent of all families who have bought health insurance through a group have all their premiums paid by employers; 49 per cent have part of their premiums paid by employers and management is picking up the health benefit costs with increasing tempo. Times have changed. Either Medicine, through its voice Blue Shield, must sit around the national bargaining table, or you must sit idly by and let labor and management negotiate for your services without consulting you—the individual doctor. By the way, I might add here that management is becoming vitally interested in medical care costs. We are beginning to see more evidences of labor and management negotiating a contract for fringe benefits and then joining together in criticizing the doctor. This is not a healthy situation, and Medicine must join together to be strong and exercise a voice in these negotiations.

Many physicians are cautious men, wary of any change, and pessimistic about the future. Medical training sometimes instills these attitudes. Many busy physicians believe it is not their responsibility to plan health services. Yet if Medicine fails to meet these changing conditions, the bureaucrat will step into the vacuum and plan a health program.

When there is a socio-economic problem, it must be solved by the local group through the free enterprise system. When the local group fails, it is the responsibility of government to fulfil the need. Government receives its power from the consent of the governed.

The commercial insurance industry discovers what the account wants, then drafts a health program to satisfy its customer without asking Medicine's advice. Blue Shield, however, is a part of the medical family and operates a health plan patterned after Medicine's wishes. Consequently, there is no third-part interference.

Medicine must give something in return for higher fees. People are beginning to wonder whether Blue Shield is intended to provide security for the doctor instead of the patient. Every business enterprise that refuses to keep pace with our changing times FAILS. To keep pace, an organization must stay alert through research, advertising and progressive management. Blue Shield is no different.

Research needs to be done toward developing coverage for those 65 years of age and over. This group in our state comprises 11 per cent of our population, the highest of any state in the Union. We need to develop a variety of service contracts with deductible and coinsurance features to determine just what the public will buy with its medical care dollar.

Iowa's Blue Shield is not meeting the needs of our changing times. Organized Medicine in other states is doing something about our changing times. Twenty societies have raised service limits to $6,000 or above. Twenty-one societies have provided service income pro-

tection to families having annual incomes of from $4,000 to $6,000. Only one other plan in the country has a $3,600 income limit, that being Florida.

When Blue Shield was founded by action of the House of Delegates on November 1, 1944, the service income limit provided protection for 60 per cent of the population. Because of our changing times, the present Blue Shield service provision of $3,600 provides service benefits for only 24.6 per cent of our families; 17 per cent of our family work force fall into the income bracket $3,600 to $4,800; and 18.7 per cent are in the $4,800 to $6,000 category. To keep pace with our times and take care of the same population group that we originally believed it was necessary to give full service benefits, it is essential that a sliding scale plan be developed whereby 60 per cent of our families can avail themselves of full service protection.

Some doctors believe the deductible approach is the only answer, but one must realize the basic fact that a deductible is not a saleable product unless the purchaser is assured that a specified dollar deductible is his maximum liability. To provide this, a maximum fee schedule must be established. Another problem your Committee would call to your attention is that a $50 deductible would actually deny most of the 1,400 generalists in our society the opportunity to derive much, if any, benefit from Blue Shield, because so much of their work involves accident care and minor surgery for which less than $50 is normally charged.

WHAT SHOULD BLUE SHIELD OBJECTIVES BE?

1. Set a pattern for surgical-medical care benefits.
2. Use the voluntary mechanism to meet the needs of the public.
3. Stop further government encroachment.
4. Prevent union and management plans from expanding.
5. Strive constantly to fit the insurance mechanism into the economics of a medical practice.
6. Keep changing benefits so as to keep pace with changing methods of practicing good medical care. In other words, keep pace with our changing times.
7. Unite Medicine into a powerful voice. Divided we will fall by the wayside.

Our Committee has devoted considerable time and effort to the study of prepayment systems with, of course, particular reference to our own Blue Shield Plan. We have studied what organized medicine in other states has done to combat the many threats and provide a satisfactory mechanism for their patients to prepay their costs. Our Subcommittee on Prepayment Insurance has delved deeply into this entire problem. The ISMS Fee Committee has studied current charges for professional services in our state, and the Relative Value Schedule is the end-product of its research.

Medicare has also been a facet of our Committee's work. Approximately 800 claims have been submitted to the Medicare Division of the Iowa State Medical Society. Government has paid $30,470.50 for 447 approved claims, or an average of $68.16 per claim. The remaining claims are in the various stages of processing. Statistical services are rendered by the Wisconsin State Medical Society. Our contract provides for federal payment of approved claims on a monthly basis. Consequently, it will normally require 45 days for a doctor to receive payment on his Medicare claims.

This concludes the supplemental report of our committee. Thank you, Mr. Speaker.

C. V. EDWARDS, M.D., *Chairman.*

SUBCOMMITTEE ON PREPAYMENT MEDICAL CARE

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

You have before you a copy of the proposed Standard Claim Form for reporting physicians' services to commercial insurance companies.

This form is the outgrowth of a demand by the physicians of Iowa for a relief from the maze of forms now in use, the accumulated experience of the commercial insurance industry whose members have been equally concerned with the problem, considerable investigation and effort by the members of this Subcommittee, and the invaluable help of our newly appointed consultant from the commercial insurance industry and its Health Insurance Council.

The form contains the minimum but all the necessary information required for the processing of claims for either group or individual policyholders. Should this form be approved by the House of Delegates, it is our intention that all member physicians will use it exclusively in filing claims, and if the insurance company wishes additional information or insists on the use of its own form, the reporting physician shall make a charge—for example, $3—to the company for the supplemental report.

These forms would be printed by the ISMS and furnished to the members at nominal cost—about $2.75 a thousand—provided, of course, that the Trustees of the Society approved the financing.

We have been assured by several of the larger commercial companies that they will be happy to accept this form as here shown.

WM. C. ELLER, M.D., *Chairman.*

These remarks of Dr. Eller were supplemented by the following which were presented by Dr. Tom D. Throckmorton, chairman, Executive Committee, Iowa Medical Service (Blue Shield). (This report was referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

SUPPLEMENTAL REPORT ON BLUE SHIELD

For a long time I have harbored increasing doubts as to the future of Iowa Medical Service. These doubts have been somewhat akin to the small suspicions and concerns which enter one's consciousness about the weakness and frailties of a loved one or an old friend. It is difficult to say when such a doubt is transformed into a conviction. But eventually, as confirmation succeeds doubt, one is constrained to voice his convictions, whereas earlier he was unwilling to express his doubt.

I am willing now to say that the future of Iowa Medicine and of Iowa Medical Service is far from being assured; and it will not be assured unless we have a different type of thinking by Blue Shield and more advanced attitudes by our participating physicians.

In 1956, the House of Delegates of the Iowa State Medical Society voiced similar convictions, and urged Iowa Medical Service to remove inequities from its present contracts and to provide new, extended and higher limit contracts at a fair schedule of fees. Iowa

Blue Shield has done this, with the complete help and cooperation of the Iowa State Medical Society. If the participating physicians wish, the type of coverage Iowa Medical Service is prepared to offer is as follows:

Revised Benefits: Medical care in hospital; intensive care to patient in critical condition; unusual care over and above routine hospital benefit; consultations; surgical services including surgical assistant, preoperative and postoperative care in the hospital; concurrent services by two or more doctors by reason of necessity for supplemental skills; obstetric services on family contract only; anesthesia services; radiation therapy; emergency first aid for accidental injuries within 24 hours of accident; and diagnostic x-ray and pathologic examinations in connection with accidents, up to $50 per accident.

Payment Basis: (Refer to Relative Value Schedule of Iowa State Medical Society for units per service.)

Plan A "300": Service income limitation $3,600 per year on family contract. Payment on value of $3 unit. Approximate monthly cost to family, $4.50.

Plan AD "300": Plan A with $15 deductible per illness or accident. Payment at $3 unit less $15 per illness. Approximate monthly cost, $3.85.

Plan B "400": Service income limitation $4,800 per year on family contract. Unit value basis, $4. Approximate monthly cost to family, $6.

Plan BD "400": Plan B with $20 deductible per illness or accident. Payment at $4 unit less $20 per illness. Approximate monthly cost, $5.

Plan C "500": Service income limitation $6,000 per year on family contract. Unit value basis, $5. Approximate monthly cost to family, $7.50.

Plan CD "500": Plan C with $25 deductible per illness or accident. Payment at $5 unit less $25 per illness. Approximate monthly cost, $6.25.

Plan E: No published fee schedule—based on doctor's fair and reasonable community charges for services rendered. Payment in full for services in contract. No service income limitation. Approximate monthly cost, $8.25. Maximum benefit $1,000 per illness or accident.

Plan F: Same as Plan E with $25 deductible per illness or accident. Approximate monthly cost, $6.25.

Plan G: Same as Plan E with $25 deductible—20 per cent payment by patient, 80 per cent payment by Blue Shield (coinsurance and deductible combined). Approximate monthly cost, $5.40.

Plan H: Same as Plan E with 20 per cent payment by patient, 80 per cent payment by Blue Shield (coinsurance only). Approximate monthly cost, $6.60.

Plan XL: Supplementary contracts for radiology and pathology services transferred from Blue Cross to Blue Shield persuant to recent legislation.

Mr. Speaker, as a delegate from Iowa Medical Service I request not only a reaffirmation by the Iowa State Medical Society of the "service principle" of health insurance but also urge a reaffirmation of last year's stand in these matters to aid in the adoption of any or all of these possible contracts that seem to serve a useful purpose.

TOM D. THROCKMORTON, M.D., *Chairman, Blue Shield Executive Committee.*

SUBCOMMITTEE ON CHRONIC ILLNESS

(Referred to the Reference Committee on Legislation and Public Relations for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

During the past year the Subcommittee on Chronic Illness helped organize and participated in a refresher course for members of the Iowa Nursing Home Association. These courses have been so successful that another series of lectures have been arranged for this summer, and several members of the Subcommittee on Chronic Illness are scheduled as speakers. An article, "The Doctor and the Nursing Home," was written by the Subcommittee and published in the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY in June, 1956.

As reported to the House of Delegates last year, the Subcommittee continued to meet with members of the Iowa Nursing Home Association in an attempt to write a sample code for licensing nursing and custodial homes. This code was patterned after Ordinance No. 4902, of the City of Des Moines. After several meetings, the chairman of the Subcommittee was to meet with the chairman of the Nursing Home Association committee to correct the final draft of the sample ordinance, a document that was acceptable to both groups. A few hours before this meeting, one of the nursing homes in Council Bluffs burned. The governor and the legislature, which was in session at the time, announced to the press the need for a law to license nursing homes. The governor appointed a committee to inspect the home in Council Bluffs which had been destroyed by fire, and write a new licensing bill. At no time did the governor or legislators ask the Medical Society for any help or advice.

The chairman of the Subcommittee on Chronic Illness wrote to the legislature's committee, telling of the work that the State Medical Society has been carrying out during the past two years. The chairman of the ISMS Subcommittee received a reply saying that a bill was being written and that the legislature would correspond further with the State Medical Society at a later date.

A bill called "House File 572" was introduced in the House, and a companion bill, "Senate File 567," was introduced into the Senate. The proposal known by these separate numbers was called, "An Act relating to the licensing, inspection and regulation of nursing homes and custodial homes and providing for regulation, enforcement procedures and penalties." It finally reached the Sifting Committee and remained there.

On April 10, 1957, Mr. R. B. Throckmorton called the various members of the Subcommittee on Chronic Illness and said that the legislators were anxious to have a hearing on these two bills. The chairman and one of the members of the Subcommittee on Chronic Illness met with a committee of legislators at the State House on April 11, 1957. The legislators appeared to have been under the impression that the State Medical Society was not anxious to have the bill released by the Sifting Committee, but the physicians convinced the legislators that the State Medical Society was very anxious to have such a bill passed. Through Mr. Throckmorton, the members of the committee of legislators were given copies of the sample code approved by both the Nursing Home Association and the State Medical Society. Shortly afterward, these bills were presented to both the House and Senate and passed by them. The governor agreed to sign the bill.

The State Board of Health feels that the consequent law is inadequate because it does not give it enough power to enforce the regulations. The Subcommittee

on Chronic Illness suggested to the legislators that a committee be appointed by the governor to study the legislation during the next two years and to suggest changes to the next legislature, which if enacted would put more teeth in it.

The Subcommittee on Chronic Illness still feels that the county medical societies should cooperate with the State Board of Health to help enforce the licensing law. County medical societies should visit the nursing and custodial homes in their counties periodically, not only to cooperate and give advice to owners, but also to ensure the best medical care for the inmates.

W. D. PAUL, M.D., *Chairman.*

SUBCOMMITTEE ON MATERNAL AND CHILD HEALTH

(Referred to the Reference Committee on Miscellaneous Business for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

There have been no meetings of this Committee this year.

The Subcommittee on Maternal Mortality has continued to function, and reports of the work done by them have been published in the JOURNAL.

Dr. Donnelly was requested at the last meeting to try to arrange some sort of meeting between the profession, the welfare workers and the bar association. Work has been done on this meeting, and it will probably be held sometime in the fall of 1957.

OMAR STAUCH, M.D., *Chairman.*

SUBCOMMITTEE ON RURAL HEALTH

(Referred to the Reference Committee on Miscellaneous Business for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

On March 12, 1957, the first Rural Health Conference ever to be presented in Iowa was held at Memorial Union at Iowa State College. Those in attendance, especially the lay people, felt that the program was pertinent, informative, and well presented. It is believed that much good was accomplished, not only in the enlightenment of those present, but more especially in the sphere of creating better public relations. A questionnaire has been sent out to each person who attended the Conference, asking for criticisms and suggestions as to how to improve future rural health conferences. A critique is to be held within the next few weeks at which there will be representation from the Rural Health Subcommittee as well as from the various co-sponsoring organizations of this first Rural Health Conference. Thus, it is hoped that a better rural health conference with greater attendance will result next year.

It is desirable again to re-emphasize the importance of the preceptorship program jointly sponsored by your State Medical Society and the College of Medicine at Iowa City. No period of time in the medical student's life is more important than the time he spends as a preceptee with a practicing physician. The character of his future medical career may in no small part be influenced by his preceptorship experiences. Too, a preceptor cannot help being immensely influenced by the infusion of the enthusiasm of youth he receives from the student.

The preceptorship program is the one effective means that we physicians have of convincing our University's medical students of the advantages of a practice in Iowa. I should be remiss not to state that the preceptorship program deserves the staunchest backing of every physician in Iowa. In order that a replacement list of preceptors may be available, in the event any physician who has already agreed to serve as a preceptor during the coming summer becomes ill or for any other reason is unable to fulfill his duties, it is requested that physicians who have not already signed up as preceptors correspond with Wilbur Quinn of the State Medical Society office, Dr. Stuart Cullen, of the Medical School faculty, or any member of the Rural Health Subcommittee, so that his name can be placed on the reserve list.

A preceptorship luncheon will be held Monday noon at 12:15 p.m. in the Downstairs Luncheon Room. All preceptors as well as any other physicians interested in the preceptorship program, are urged to attend. A very interesting program pertaining to preceptorship has been arranged. The luncheon will adjourn before 2:00 p.m. so that those in attendance will have plenty of time to get to the afternoon sessions of the convention.

S. P. LEINBACH, M.D., *Chairman.*

COMMITTEE ON PUBLIC RELATIONS

(Referred to the Reference Committee on Legislation and Public Relations for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

In view of the fact that the hospital-doctor controversy has now been settled satisfactorily, the Public Relations Committee wishes to thank you, the delegates from the various county medical societies, and also all the other members of the State Medical Society for the wonderful cooperation which was rendered not only to the Public Relations Committee but also to your officers. I am thinking particularly of the fact that we were able to contain ourselves publicly, so that we did not get into any hassle in the press or elsewhere. Thus we suffered no loss of public esteem. Our efforts throughout the whole controversy were particularly directed toward the avoidance of public utterances and statements of a controversial nature which could result only in a distortion of facts and a lowering of esteem, with no benefit to our side. This is as it should be, and I think that we can honestly and truly say that our conduct was befitting the profession and that the results were satisfactory to all members of the profession.

Again let me say, "Thanks."

The Public Relations Committee has now come to the point where we, its members, feel there should be a reevaluation of the Committee's purposes. You know, as well as I, that all activities in the State Medical Society have necessarily to be public relations minded. Now that the crises of the hospital-doctor controversy and other problems have passed, is it necessary for us to continue our activity. Or should that work be taken over in part by every other committee as it sees fit? Or should the Public Relations Committee be a coordinating body merely to oversee the public relations aspect of all instrumentalities of the Society, or should that work be left to the members of the various committees and officers of the State Medical Society? Is there an overlapping of activity on the part of the

Public Relations Committee, in connection with other committees, as for instance in the field of these television programs? Inherently this activity should belong to the Committee on Public Health and the greater portion of that work has been carried on by that Committee, although it certainly is public relations. Public relations are involved in the activities of the Rural Health Subcommittee, the Industrial Health Subcommittee and any other committee you might name. To what extent does the Public Relations Committee serve a purpose, and how can it best serve?

In conclusion, I wish personally to thank Mr. Ray Stewart for the quality of work and the high standard of operation that are being maintained by him. Also I want to thank Mr. Gerald Buckles for his untiring efforts in keeping in touch with the various county medical societies, as well as with the various members of each county medical society, in order to carry out what has been our *main* activity during the last six months, namely, keeping the members of our State Medical Society informed of what is going on, and stimulating interest in the many activities of the State Medical Society. If we are to maintain our position of independent, free-thinking, free-acting, progressive physicians, we necessarily must have a well organized State Medical Society, with the membership of that Society well informed.

Otto N. Glesne, M.D., *Chairman.*

Supplemental Reports of Special Committees

OSTEOPATHIC COMMITTEE

(Referred to the Reference Committee on Miscellaneous Business for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

In response to a request from the Judicial Council of the Iowa State Medical Society as well as requests from individual members of the Society, the Osteopathic Committee has studied the problems arising in the relations between doctors of medicine and osteopaths. It is obvious to all that the basis for ethical barriers must stem from the assumption that osteopathy is a form of "cultist healing," for to quote the Principles of Medical Ethics: "All voluntarily associated activities with cultists are unethical."

What is the status of modern osteopathy? Perhaps a brief historical summary is in order. The father of osteopathy, Andrew Taylor Still, was a practicing physician, a doctor of medicine, who in 1874 proclaimed "a new system of drugless healing." He believed "Osteopathy is an independent system and can be applied to all conditions of disease." He advised surgery only as a last resort. He inveighed against drugs, serums, vaccination, use of electricity, x-radiation, hydrotherapy and other adjuncts. It is well to emphasize here that Still left the fold of regular medicine voluntarily. He was not evicted. Not only did he coin a new term for his practices but he refused even to use the word *medicine* in any connection with osteopathy. A historian would have little hesitation about calling Still's 19th Century "discovery" cultist healing.

Has osteopathy changed since Still's time? Of course it has. For one thing, it has taken on a new title. In the mid 1930's a few bold manipulators risked rotating Still's buried bones by calling their school of healing "osteopathic medicine." It may have been no more than coincidence that this subtle change in terminology coincided with the development of the sulfonamide drugs and the arrival of the antibiotic age.

But have the fountain-heads of learning, the osteopathic colleges, changed? Again we must say, "Yes." For in 1935 a committee of the Canadian Medical Association evaluating American osteopathic colleges found training in anatomy "in no degree comparable to that required by our students of medicine," stated that pathology is "the forgotten man of the osteopathic system," and discovered that competent clinical training "not only is not given; it is not seriously attempted." In comparing these deplorable conditions with those reported by the second Cline Committee in 1955, we find that as recently as two years ago, in the osteopathic schools, although "some departments, most frequently Anatomy, are outstanding, Pathology is the weakest link of the basic sciences." The Committee also found that "the clinical material is inadequate for the number of students in the majority of colleges," and that "all osteopathic colleges spontaneously expressed a desire for the assistance of doctors of medicine as members of their faculties." So you can see there has been improvement—at least in the desire to associate with doctors of medicine.

Now then, where is the cultism? The modern "osteopathic concept" holds that the body is a unit which possesses the inherent ability to overcome most curable diseases. Certainly we should have no quarrel with this view were it not for the implication that osteopathy provides some unique and distinct insight into these curable diseases—namely, manipulative therapy for the "osteopathic lesion." For as the Cline Committee summarized: "Colleges of osteopathy teach that the symptom complex of 'osteopathic lesion' exists. Its exact nature is not known. The microscopic structure has not been studied. Efforts to produce the 'lesion' experimentally have not been satisfactory. It may be relieved by manipulative therapy, but the mechanism of relief is not understood. The 'lesion' has not been demonstrated to cause organic disease, and its correction alone does not cure organic disease. Verily, this 'lesion' is as plain as a black cat walking through a coalyard at midnight!"

Some may question whether the osteopaths are really serious about this "osteopathic lesion." For the doubters, the American Osteopathic Association set the matter straight with a brochure published in May, 1955, entitled, "Presenting Osteopathy Today." This publication warms up to the subject with the following bit of information, "One of the contentions of osteopathy is that many of man's ills stem from the fact that he stands erect. It is amazing how many disturbances, so common in man and so rare in our four-legged friends, are directly related to the circulatory difficulties, impaired drainage, organ sag, congestion, etc., which are associated with the gravitational stresses of our vertical position." And what do these stresses constitute? You guessed it: "osteopathic lesions." And where is the "osteopathic lesion" manifested? In the musculoskeletal system. And now for the clincher of pure logic: "Osteopathy emphasizes the musculoskeletal system because it is the most accessible, because it is responsive to treatment and because it has so often a leading role in the disease process."

The Cline Committee maintained that less than 10

per cent of the curriculum of the schools was devoted to osteopathy, and yet in this glossy 1955 brochure 16 out of 28 illustrations depict or imply spinal manipulation, and 11 out of 20 pages are devoted to the "osteopathic lesion" and the "osteopathic concept."

Thus it would appear that modern osteopathy, which has gained limited public acceptance by aping regular Medicine, and has won quasi-legal recognition by playing the "underdog" role, is still bemused by mystical manipulations, and your Committee therefore finds itself in complete agreement with the report adopted by the House of Delegates of the AMA in June, 1955, to wit, "An appreciable portion of the current education in colleges of osteopathy definitely does constitute the teaching of cultist healing, and is an index that the "osteopathic concept" still persists in current practice."

It is also worthy of note that this same AMA report leaves the door open for further discussion between the two groups. All that is necessary is for the American Osteopathic Association to abandon its unproved "osteopathic concept" and for the schools to delete this term from their catalogs—simple conditions, if we are to believe the medical apologists for osteopathy.

With this historical background, and noting that the Iowa State Medical Society is a component part of the AMA and therefore bound to observe the Principles of Medical Ethics and rulings of the Judicial Council, the Committee wishes to discuss the ethical relations between doctors of medicine and osteopaths under five headings: 1) Ethical relations between doctors of medicine and osteopaths practicing in the same locality. 2) Ethical problems confronting medical specialists in accepting referred patients from osteopaths. 3) Special ethical problems confronting M.D. radiologists and pathologists in certain necessary contacts with osteopaths. 4) The association of doctors of medicine with osteopaths in hospitals where the governing body of the hospital permits both to practice. 5) Ethical considerations involved in the relations between doctors of medicine practicing or employed in state or other governmental positions, and osteopaths.

Regarding the first three categories, the report of the Judicial Council of the AMA in December, 1955, leaves little room for doubt: ". . . In the absence of a directive from the House of Delegates and in the absence of any alternative statement from the osteopaths themselves that they no longer adhere to their original cult theories, the Judicial Council reasserts its opinion that all voluntary associations with osteopaths are unethical. Only the House of Delegates can alter this policy and, until the House is convinced that osteopathy is no longer a sectarian practice and so votes, it is incumbent on members of the American Medical Association to observe existing policy." In official letters the Judicial Council has further stated that there should be no consultation with osteopaths, but if a doctor of medicine is called in on a case when an osteopath is in charge, the doctor of medicine may receive the report from the osteopath and then take the case over completely. When a specialist in medicine makes a medical report relating to an individual who is or may be under the care of an osteopath, the report can be submitted directly to the patient but it is unethical for the doctor of medicine to deal directly with the osteopath. When a physician's former patient is under the care of an osteopath, the physician may supply, through the patient, pertinent excerpts from the former patient's medical case records. Your Committee wishes to emphasize here that everything possible should be done for the patient's welfare, and can be done in an ethical manner.

In regard to the fourth category, where doctors of medicine and osteopaths practice in the same hospital, the Judicial Council of the AMA ruled in 1952: ". . . It is not improper for members to hospitalize patients in certain of the smaller hospitals in outlying areas, even though in these hospitals, facilities and privileges are also extended to certain osteopathic physicians and surgeons—provided that dual hospital staff structure is maintained without intermingling." Although this ruling was made in reference to a situation involving an acute shortage of hospital beds, it is applicable to conditions existing in certain hospitals in Iowa, when doctors of medicine find themselves in a position not of their own choosing or responsibility.

The above ruling does not make any provision for the doctor of medicine who is head of the pathology department and laboratory or of the radiology department to give reports directly to osteopaths who are on the osteopathic staff of the hospital. The Judicial Council of the AMA has already stated that associations between doctors of medicine and osteopaths which are regulated by state or federal law cannot be considered voluntary and consequently should not be considered contrary to the Principles of Medical Ethics. It might be considered, therefore, that any associations between medical pathologists and radiologists in a small hospital, and osteopaths on the osteopathic staff of that hospital might not be considered voluntary if the governing body of that hospital required that reports be given to any and all staff members. In regard to outpatient radiology and tissue and laboratory referrals, the medical radiologist and pathologist might well heed the following from the Principles of Medical Ethics, "A consultation with a cultist is a futile gesture if the cultist is assumed to have the same high grade of knowledge, training, and experience as is possessed by the doctor of medicine. Such a consultation lowers the honor and dignity of the profession in the same degree in which it elevates the honor and dignity of those who are irregular in training and practice."

As noted above, where the law requires doctors of medicine practicing in governmental positions to associate in certain ways with osteopaths, they are immune from censure. This would include those employed by state and federal governments in such specific areas as the State Department of Health, University Hospitals, State Institutions, Veterans Administration, Public Health Service, the Armed Services, and the Department of Health, Education and Welfare. It is of utmost importance, however, that the doctors of medicine in this category confine their associations to strict legal requirements and maintain the highest ethical standards possible within the limits of their occupation.

In summary, your Committee concurs with the House of Delegates of the AMA that modern osteopathy still constitutes cultist healing. A study has been made of the Principles of Medical Ethics and rulings of the Judicial Council of the AMA in order to discover the proper ethical relations between doctors of medicine and osteopaths. Various specific situations and their ethical solutions have been discussed. Although observation of proper ethical relationships is an individual matter, it should be remembered that as

members of the Iowa State Medical Society we have agreed, through the Society's Articles of Incorporation and By-Laws, to the following: "The Principles of Medical Ethics of the American Medical Association shall be the rule of conduct for the members of this Society and shall be controlling in all decisions of the Judicial Council, the Grievance Committee, and the judicial bodies of all component societies." Your Committee makes a plea for strict observance of ethics in the hope of promoting grass roots sentiment among osteopaths to reverse the fallacious cultism of the "osteopathic concept."

Your Committee respectfully recommends that this report or pertinent portions thereof, if accepted by the House of Delegates, be communicated to each member of the Society, preferably by special letter.

J. M. Rhodes, M.D., *Chairman.*

COMMITTEE ON GROUP INSURANCE

(Referred to the Reference Committee on Miscellaneous Business for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

The Committee on Group Insurance was appointed by the House of Delegates at the 1953 annual meeting of the Iowa State Medical Society to study various plans of group accident and sickness disability insurance. The Group Insurance Committee studied a substantial number of plans presented over a period of two years and finally recommended to the House of Delegates, at the annual meeting in 1955, the adoption and sponsorship by the Society of a program underwritten by the Commercial Insurance Company of Newark, New Jersey, and Bankers Security Life Insurance Society of New York, and administered by the Holmes, Prouty, Murphy and May Agency, of Des Moines.

An open enrollment period was provided beginning June 1, 1955, during which every member of the Society to age 70, and in active practice, could enroll for the insurance without regard to his physical condition and with all pre-existing medical conditions fully covered. Thereby, the members were able to obtain this disability protection with a substantial reduction of cost and without regard to insurability.

The program was well received, and more than 50 per cent of the eligible members enrolled during the open period which closed in December, 1955.

Since the start of this group insurance program, approximately 25 per cent of the members insured have filed claims under their policies, and more than $50,000 in claims have been paid. The major cause of claims filed has been sickness, including heart conditions, virus infections, exhaustion, cancer, digestive conditions, etc. Also many claims have been settled for accidental injuries, including fractures, dislocations, back injuries, etc.

Many members have expressed themselves as pleased with the coverage available under this group disability insurance program, and many favorable comments have been received with regard to claims settlements.

The administrators will participate in this annual meeting with a display booth, and we have been advised that the insurance companies underwriting the program have consented to a special re-opened enrollment beginning during the annual meeting and to continue for 60 days, whereby the members not previously insured, to age 60 and in active practice, may apply for the insurance without submitting evidence of insurability, provided that a minimum enrollment of the previously uninsured members is obtained.

This special re-enrollment period will provide another opportunity for many of the members to participate in this group insurance program if they desire to do so.

There has also been presented to the Group Insurance Committee, information concerning group insurance programs which have been adopted by other medical societies and which might be of interest to the Iowa State Medical Society. These suggested group insurance programs are:

Office overhead expense insurance
Life insurance
Catastrophe hospital-nurse coverage

The Group Insurance Committee requests instructions as to the desirability of its investigating the possibilities of these other group insurance plans.

George G. Young, M.D., *Chairman.*

ISMS FEE COMMITTEE

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Reference is made to a letter sent to various specialty societies and to the Iowa Academy of General Practice on April 20.

The purpose and intent of this communication will be evident from a repetition of its contents:

"All such interested groups who may be meeting at this time are requested to appoint a committee to review the Iowa Relative Schedule as it applies to their sphere of interest. Any criticisms or recommended changes or corrections should be forwarded to the State Society by September 15 so that these changes may be reviewed by the Fee Committee."

W. C. Eller, M.D., *Chairman.*

Resolutions

KOSSUTH COUNTY MEDICAL SOCIETY

RE IOWA STATE MEDICAL SOCIETY DUES

(Referred to the Board of Trustees sitting as a reference committee. For final action by the House of Delegates, see the report of the Board of Trustees acting as a reference committee.)

Whereas, The Iowa State Medical Society dues have been increased due to the Hospital-Doctor controversy, and
Whereas, This litigation has been settled,
Be It Resolved, That the Iowa State Medical Society dues revert to the former level.

WAPELLO COUNTY MEDICAL SOCIETY

RE BLUE SHIELD

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Whereas, The Wapello County Medical Society, during the course of a business meeting, voted unanimously against the *principle* of full service medical coverage, and

WHEREAS, The Iowa State Medical Society is opposed to interposition of a third party in the "Doctor-Patient" relationship, and

WHEREAS, Full service medical coverage for groups other than medically indigent patients brings a third party into the "Doctor-Patient" relationship by usurping the right of the doctor to set his fee, and

WHEREAS, The contractual agreement to accept a fee in full from one insurance company, and not from all, produces an unfair competitive practice in the sale of voluntary health insurance, be it therefore

Resolved, That the Iowa State Medical Society oppose the projected Blue Shield contracts offering full service coverage above the indigent wage level.

KENNETH E. LISTER, M.D., *President.*

CEDAR COUNTY MEDICAL SOCIETY

RE BLUE SHIELD

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, Blue Shield has followed the request of the 1956 House of Delegates to make available to the public a variety of full service Medical and Surgical Plans the Cedar County Society commends the actions of Blue Shield and praises the Blue Shield Board's efforts to keep the Doctor's voice in medicine through Blue Shield,

Therefore Be It Resolved, That Cedar County Society hereby approve the adoption of the Iowa Relative value schedule to be used as a basic standard for Blue Shield contract offerings, and,

Be It Further Resolved, That Cedar County Society approve the principle of varying full service offerings at proportionate valuations of the unit to allow the physician his usual fee based on the income of his patient, and,

Be It Resolved, That the Cedar County Medical Society support Blue Shield in its efforts to keep medicine a service agreement between doctor and patient without further interference from government agencies, and,

Be It Resolved, That a resolution requesting Blue Shield to provide immediately plans drafted especially for the aged group over 65 years, and,

Be It Finally Resolved, That Blue Shield Board should be complimented for their fine efforts, and valuable time spent away from their practice in the interest of the medical profession of the great state of Iowa.

JOHNSON COUNTY MEDICAL SOCIETY

RE BLUE SHIELD

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, There is marked disagreement among the rank and file members of the Iowa State Medical Society concerning the advisability of extending full coverage insurance beyond the present level, and,

WHEREAS, It would seem inadvisable for the doctors of the state of Iowa to sponsor panel medicine by advocating further full service fee schedule type of insurance above the $3,600 level,

Be It Resolved, That the House of Delegates instruct the Blue Shield Board to:

1) Correct the present inequities of the now existing Blue Shield fee schedule at the $3,600 income level,

2) Offer no full service contract above the $3,600 income level,

3) Continue to investigate deductible co-insurance and other indemnity plans, all on a "non-fee schedule basis," these plans to be offered for those who desire additional coverage.

SCOTT COUNTY MEDICAL SOCIETY

RE BLUE SHIELD

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

The Scott County Medical Society offers its vigorous support of a Blue Shield policy embodying a deductible and co-insurance feature as being fair, reasonable in cost, and preserving for the individual some responsibility for himself and his family. This type of policy serving families of over $3,600 yearly income, is to supplement the present full service contract to families whose annual income is $3,600 or less.

RE TRIBUTE TO GORDON F. HARKNESS, M.D.

(Unanimously approved by the House of Delegates without referral to a reference committee.)

WHEREAS, Dr. Gordon F. Harkness, member of the Scott County Medical Society and former President of the State Medical Society, 1935, is a charter member of the Blue Shield Board of Directors, and

WHEREAS, Dr. Harkness has served continuously on the Executive Committee of Blue Shield while this organization has grown from a membership of only 13,000 in its first year of business to 582,000 persons in 1957, and

WHEREAS, Dr. Harkness has given unstintingly of his time to provide invaluable aid on every facet of professional, economic and public relations problems affecting Blue Shield,

Be It Resolved, That Dr. Gordon F. Harkness be given public recognition of his amazing accomplishments toward the Blue Shield cause and that this recognition be spread on the minutes of this annual meeting of the Iowa State Medical Society.

CASS COUNTY MEDICAL SOCIETY

RE PROFESSIONAL LIABILITY INSURANCE

(Referred to the Board of Trustees sitting as a reference committee. For final action by the House of Delegates, see the report of the Board of Trustees acting as a reference committee.)

WHEREAS, The Cass County Medical Society held discussions at its regular April meeting regarding the increasing frequency of medical liability and malpractice suits against doctors, and

WHEREAS, In medical liability suits there is often evidence of inadequate preparation on the part of the defense, and

WHEREAS, There is also often evidence of some measure of lack of cooperation between the medical and legal professions,

Now Therefore, Be It Hereby Resolved, That any member of the Iowa Medical Society may secure, without cost, in the event of a malpractice allegation, expert medical opinion and legal advice and talent for the purpose of aiding his defense; providing that the Medical Defense Committee of the Iowa Medical Society, after reviewing his case, feels that the member is entitled to such aid. This fund to be called the Medical Defense Fund and to be built up over the years through assessment of its members of $1 per year, for the purpose of providing legal assistance to members in case of a malpractice suit. This additional association benefit is intended to supplement (not take the place of) their own medical liability (malpractice) insurance which each member is urged to procure prior to your commencement of practice, and

Be It Further Resolved, That the President appoint a Medical Defense Committee of five members representing the approximate geographical sections of the state, each for a term of five years—the terms to be arranged so one terminates each year whose duties shall be to investigate cases and administer the Fund; further, that the legal counsel of the Iowa Medical Society be apprized of this resolution and be called by the Committee when needed to aid in the defense of the defendent member *(only aid and advise the medical liability legal representation and not take the place of),* and

Be It Finally Resolved, That this plan be put into operation immediately.

JEFFERSON COUNTY MEDICAL SOCIETY

RE BLUE SHIELD

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Resolved, That the Jefferson County Medical Society is opposed to the full-coverage contract currently being proposed by the Blue Shield and Blue Cross. We feel there are many valid objections to this contract that have been raised by the opponents of such a plan. Our main objection is that this will violate the basic proposition on which Blue Shield and Blue Cross was originally formulated; that is low cost hospital and medical-surgical coverage for patients of a low income group.

We further feel that the present limits of $3,600 should be adhered to in future contracts.

This resolution was endorsed by all members of the Medical Society.

Jack N. Morgan, M.D., *Secretary.*

HAMILTON COUNTY MEDICAL SOCIETY

RE BLUE SHIELD

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Whereas, The Iowa State Medical Society has been successful in the field of sponsoring Blue Shield, a prepaid medical care insurance program, and

Whereas, It is now necessary that, in order to present our patients with the best possible insurance coverage and by the same instrument preserve for the physicians an effective method of controlling commercial underwriters policies, the Iowa State Medical Society must remain in the insurance field, and

Whereas, A medium of deductible and/or co-insurance plans have been developed, but not yet instituted by Blue Shield to aid both the patient and the doctor regarding fees, and

Whereas, Neither deductible and/or co-insurance plans are applicable without a definite measure of maximum fee level for any specific procedure, let it therefore be

Resolved, That the Hamilton County Medical Society hereby requests that Blue Shield present to the public *as soon as possible* two (2) or more maximum liability insurance plans with deductible and/or co-insurance features, and be it

Resolved Further, That Blue Shield continue to offer the present 1953 Blue Shield full service liability certificate *without* deductible and/or co-insurance benefits for the protection of the usually defined medical borderline indigent group.

E. F. Brown, M.D., *Secretary.*

BLACK HAWK COUNTY MEDICAL SOCIETY

RE BLUE SHIELD

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Whereas, The basic principle of full service coverage is socialistic in philosophy and interjects third party control over the patient and his doctor, and

Whereas, Some sense of responsibility for its health beyond the payment of a premium should abide with the family to preserve its pride and integrity, and

Whereas, Under proposed Blue Shield plans, the Blue Shield fee schedule will at once become the fee schedule for the entire state,

Now Therefore, Be It Hereby Resolved, That the House of Delegates instruct the Blue Shield Board (1) that the proposed Plan A 300 and Plan AD 300 with service income level at $3,600 be put into effect for the purpose of caring for the medically indigent, (2) that the proposed Plans B 400, BD 400, C 500 and CD 500 be rejected, and (3) that simple indemnity contracts be written.

Dr. Eller further moved that this society go on record as favoring further investigation, on a pilot-plan basis, of plans F, G, H, and XL as presented in the recent communication from Blue Shield. The motion was carried unanimously.

WEBSTER COUNTY MEDICAL SOCIETY

RE BLUE SHIELD

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Whereas, We recognize the great services performed by Blue Shield for the physicians and patients of Iowa in the past, and

Whereas, Fee for service is essential to the preservation of freedom and high quality in medicine,

Now Therefore Be It Resolved, 1. That Blue Shield be directed to continue the $3,600 full service plan without extension. 2. That Blue Shield be directed to concentrate on alternative plans which preserve the fee for service principle without a fee schedule.

Eric M. Swanson, M.D., *Sec.-Treas.*

POLK COUNTY MEDICAL SOCIETY

RE BLUE SHIELD

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Whereas, The House of Delegates of the Iowa State Medical Society in session April 1956, after careful consideration of resolutions regarding the future status of Iowa Medical Service, Inc. (Blue Shield), instructed Blue Shield "to make available to the public a variety of full service medical and surgical insurance plans allowing the physician his usual fee both on a full payment basis and on a variety of co-insurance and/or deductible bases with appropriate and adequate premium rates," and

Whereas, The House of Delegates also instructed Blue Shield to explore the possible development and introduction of a no fee schedule program, and

Whereas, Blue Shield has given serious study to and is genuinely interested in the development of a no fee schedule plan, yet has determined that the introduction of a no fee schedule plan should be deferred until the public and doctors have had adequate exposure and experience with higher income level contracts at $6,000 and $4,800, and

Whereas, Blue Shield has perfected contracts with higher income levels which appear to meet the requests of the House of Delegates and are now ready for presentation to the public, and

Whereas, These higher income contracts offer physicians their usual charges based on the Iowa Relative Value Schedule, and

Whereas, Deductible and co-insurance features will be offered wherever it is practicable,

Therefore, Be It Resolved, That the Polk County Medical Society approves the new higher income level contracts which have been developed by Blue Shield and requests the House of Delegates of the Iowa State Medical Society to take similar action, and

Be It Further Resolved, That Blue Shield continue its studies relative to the introduction of programs to which a fixed fee schedule is not applied, and that as soon as appropriate contracts are perfected they should be offered as pilot programs in the various parts of Iowa where the doctors are willing to participate in the experiment, and

Be It Finally Resolved, That Blue Shield be requested to develop adequate catastrophic programs to supplement its basic contracts; to expand its outpatient diagnostic benefits; to join with Blue Cross and committees of their two respective sponsoring organizations to determine the feasibility of extending Blue Cross-Blue Shield benefits to the aged who are not presently eligible for enrollment.

PAGE COUNTY MEDICAL SOCIETY

RE BLUE SHIELD

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

Whereas, The new Proposed Blue Shield plans offer most of the types which the vote of the 1956 House of Delegates gave authorization to explore, but

Whereas, Since the institution of Blue Shield the income of even that segment of the population this service contract was designed to aid has risen, and

Whereas, The costs of commodities considered necessary and/or desirable to our living have risen to make, by comparison, the original usual fee for a hospital day a substandard one, and

Whereas, The proposed unit value in the lowest priced proposed plan uses a unit value the same as the original and present Blue Shield usual hospital day fee,

Therefore Be It Resolved, That the Proposed Blue Shield plans be approved by the House of Delegates in essence, but

Be It Further Resolved, That the value of the unit in the lowest paying plan be raised to a figure more in keeping with the present economy, and also,

Be It Further Resolved, That provision be allowed for change in the value of the unit in accordance with the economic picture on an at least yearly basis.

Stuart T. Ramsdell, M.D., *Delegate.*

POCAHONTAS COUNTY MEDICAL SOCIETY

RE BLUE SHIELD

(Referred to the Reference Committee on Insurance and Medical Service for study and recommendation. For final action by the House of Delegates, see the report of the reference committee.)

WHEREAS, The 1956 House of Delegates of the Iowa State Medical Society instructed Blue Shield to make available to the public a variety of full service plans allowing the physician his usual fee both on a full payment basis and on a variety of co-insurance and/or deductible basis with appropriate and adequate premium rates, and

WHEREAS, There has been considerable discussion regarding these mandates to Blue Shield, and

WHEREAS, It appears that Blue Shield has been doing precisely what it was asked by the 1956 House of Delegates to do

Therefore Be It Resolved, That the Pocahontas County Medical Society hereby request Blue Shield to offer to the public various insurance contracts utilizing the Iowa Relative Value Schedule to determine unit values coordinated by income levels as follows:

$3 per unit—$3,600 family annual income
$4 per unit—$4,800 family annual income
$5 per unit—$6,000 family annual income, and be it further

Resolved, That deductible and/or co-insurance variables be applied to above contracts if necessary to better serve the interest of the public and medical profession in Iowa.

CHAS. L. JONES, M.D., *Secretary.*

CALHOUN COUNTY MEDICAL SOCIETY

RE IOWA RELATIVE VALUE FEE SCHEDULE

(Referred to the Reference Committee on Insurance and Medical Service and to the Judicial Council sitting as a reference committee. For final action by the House of Delegates, see the report of the Reference Committee on Insurance and Medical Service and of the Judicial Council acting as a reference committee.)

Because the action in the proposed Iowa Relative Value Fee Schedule as described in the Red Book, referring to the allocation of fees to referred and referring physicians and assigning arbitrary relative values to the services performed by these physicians, is extremely controversial and completely irrelevant to the Blue Shield problem and not unlikely to result in the defeat of the entire proposal, I move that this portion of the fee schedule be stricken, and that the following statement be included in its place:

Division of fees between physicians entering into the care of a patient shall be decided by the physicians involved, provided that the patient be informed as to the amount paid to each physician. It shall not be the function of Blue Shield to enter into the financial relationship between physicians involved in care of patients covered by Blue Shield.

Under new business, the House of Delegates then approved life and associate membership for 32 physicians.

LIFE AND ASSOCIATE MEMBERSHIPS

LIFE MEMBERSHIPS
ON THE BASIS OF 50 YEARS' PRACTICE AND 30 YEARS' MEMBERSHIP

Appanoose	Claire H. Mitchell, M.D., Cincinnati
Clarke	Conreid R. Harken, M.D., Osceola
Dubuque	Ray R. Harris, M.D., Dubuque
Jefferson	Lora D. James, M.D., Fairfield
Johnson	William F. Boiler, M.D., Iowa City
	Lester A. Royal, M.D., West Liberty
Marshall	Robert R. Hansen, M.D., Marshalltown
	Levi J. Wilkinson, M.D., Marshalltown
Palo Alto	Francis X. Cretzmeyer, M.D., Emmetsburg
Ringgold	James W. Hill, M.D., Mount Ayr
Scott	Otto R. Voss, M.D., Davenport
Wapello	John E. Traister, M.D., Eddyville
	Maude Taylor, M.D., Ottumwa
Winnieshiek	Felix A. Hennessy, M.D., Calmar
Woodbury	William G. Rowley, M.D., Sioux City

ASSOCIATE MEMBERSHIPS
ON THE BASIS OF RETIREMENT OR INCAPACITATION

Adair	Lewis H. Ahrens, M.D., Fontanelle
Boone	Orson W. Clark, M.D., Ogden
Calhoun	Bertice A. Isenberg, M.D., Lohrville
Carroll	David H. Hopkins, M.D., Glidden
Clinton	Cyril J. Ryan, M.D., Clinton
Dubuque	Clarence E. Lynn, M.D., Dubuque
Johnson	Frank Senska, M.D., Iowa City
Madison	Carl B. Hickenlooper, M.D., Winterset
Polk	John Connell, M.D., Leon E. Dawson, M.D., Albert E. Johann, M.D., Ralph R. Simmons, M.D., Dennis H. Kelly, M.D., George A. May, M.D., Des Moines
Wapello	Walter E. Anthony, M.D., Ottumwa
Warren	George A. Jardine, M.D., New Virginia
Woodbury	James Christiansen, M.D., Sioux City

There was one nomination for the Outstanding General Practitioner award, Dr. Elizabeth Smith Kennedy, of Fayette County. This nomination was referred to the Reference Committee on the General Practitioner Award.

Councilors of the respective districts were asked to submit the names of representatives to serve on the Nominating Committee. They were as follows:

1st District, E. F. Hagen, Decorah
2nd District, T. E. Davidson, Mason City
3rd District, D. H. King, Spencer
4th District, H. E. Farnsworth, Storm Lake
5th District, G. E. McFarland, Jr., Ames
6th District, D. D. Harris, Marshalltown
7th District, C. H. Stark, Cedar Rapids
8th District, L. A. Coffin, Farmington
9th District, E. A. Larsen, Centerville
10th District, P. F. Chesnut, Winterset
11th District, M. L. Scheffel, Malvern

On recommendation of the Judicial Council, the Speaker suggested to the Nominating Committee that it hold at least one open hearing at which Society members could discuss nominees for the various offices of the Iowa State Medical Society.

Delegates were reminded to complete registration cards to be handed in at the door of the House of Delegates Wednesday morning and were told the House of Delegates would convene promptly at 7:30 a. m.

The House of Delegates was declared in recess at 4:45 p.m.

WEDNESDAY MORNING SESSION MAY 1, 1957

The Wednesday morning session of the House of Delegates was called to order at 7:30 a.m. The House of Delegates approved taking attendance by registration cards. There were 104 delegates, 6 voting alternates, and 13 ex-officio members present.

County	*Delegate*	*Alternate*
Adams	C. L. Bain	
Audubon	R. L. Bartley	
Benton	J. E. Blumgren	
Black Hawk	Craig Ellyson	
	Robert Miller	
	T. L. Trunnell	
	F. G. Loomis	
Boone	R. L. Wicks	
Bremer	R. E. Shaw	
Buchanan		P. J. Leehey
Buena Vista	H. E. Farnsworth	
Butler	F. A. Rolfs	
Calhoun	C. R. Wilson	
Carroll	J. M. Tierney	
Cass	R. H. Moe	
Cerro Gordo	T. E. Davidson	
	Sidney Brownstone	
	J. K. MacGregor	
Chickasaw		C. W. Clark
Clay	D. H. King	
Clayton	D. W. Pfeiffer	
Clinton	R. F. Luse	
	V. W. Petersen	
Dallas-Guthrie	W. A. Castles	
	W. A. Seidler	
Delaware	J. E. Tyrrell	
Des Moines	F. G. Ober	
	E. P. Russell	
Dubuque	D. F. Ward	
	C. J. Schueller	
	R. J. McNamara	

County	*Delegate*	*Alternate*
Emmet	E. K. Vaubel	
Fayette	A. F. Grandinetti	
Floyd	O. H. Banton	
Greene	P. E. Lohr	
Grundy		H. V. Kahler
Hamilton	G. A. Paschal	
Hancock-Winebago	D. F. Shaw	
Hardin	J. J. Shurts	
Harrison	A. C. Bergstrom	
Howard	C. W. Rainy	
Iowa	D. F. Miller	
Jefferson	J. W. Castell	
Johnson	G. C. Albright	
	L. H. Jacques	
	W. M. Keettel	
	W. M. Kirkendall	
	J. M. Layton	
	C. E. Schrock	
	S. C. Ware	
	C. E. Radcliffe	
Jones	E. H. DeShaw	
Kossuth	Paul Warner	
Lee	L. C. Pumphrey	
Linn	C. H. Stark	
	J. J. Keith	
	J. J. Redmond	
	John Parke	
	L. J. Halpin	
Lucas	Dean Curtis	
Lyon	G. D. Bullock	
Madison	P. F. Chesnut	
Mahaska	G. W. Bennett	
Marion	D. A. Mater	
Marshall	D. D. Harris	
Montgomery	Oscar Alden	
Osceola	F. B. O'Leary	
Page	S. T. Ramsdell	
Palo Alto		J. R. Hyde
Plymouth	F. D. Christensen	
Pocahontas	J. B. Thielen	
Polk	D. F. Crowley, Jr.	
	R. A. Dorner	
	N. W. Irving	
	T. A. Bond	
	J. T. Bakody	
	F. M. Burgeson	
	J. T. McMillan	
	B. M. Merkel	
	C. C. Woodburn, Jr.	
	M. E. Alberts	
	C. W. Losh, Jr.	
	R. B. Stickler	
	D. C. Wirtz	
Pottawattamie		H. W. Mathiasen
	C. V. Edwards	
	Isaac Sternhill	
Poweshiek	E. S. Korfmacher	
Sac	J. W. Gauger	
Scott	A. B. Hendricks	
	P. E. Gibson	
	J. H. Sunderbruch	
	J. F. Bishop	
Shelby	J. H. Spearing	
Story	G. E. McFarland, Jr.	
	G. E. Montgomery	
Tama	C. W. Maplethorpe, Sr.	
Union	H. J. Peggs	
Van Buren	L. A. Coffin	
Wapello	P. D. McIntosh	
	K. E. Lister	
Warren	C. A. Trueblood	
Washington		C. A. Boice
Wayne	C. N. Hyatt	
Webster	C. J. Baker	
	H. H. Allen	
Winneshiek	E. F. Hagen	
Woodbury	A. Q. Johnson	
	P. L. Bettler	
Wright	G. E. Schnug	

OFFICERS PRESENT AS EX-OFFICIO MEMBERS OF THE HOUSE

W. L. Downing	A. F. Fritchen
Fred Sternagel	P. W. Brecher
R. F. Birge	E. F. Van Epps
N. B. Anderson	C. H. Flynn
H. J. Smith	F. C. Coleman
G. H. Scanlon	T. D. Throckmorton
W. D. Abbott	

Minutes of the April 28 meeting of the House of Delegates were read and approved. The election followed and the following physicians were chosen:

President-Elect	W. D. Abbott, M.D., Des Moines
Vice President	Rubin H. Flocks, M.D., Iowa City
Secretary	*Richard F. Birge, M.D., Des Moines
Treasurer	*N. Boyd Anderson, M.D., Des Moines
Trustees	*G. H. Scanlon, M.D., Iowa City—3 year term
	S. P. Leinbach, M.D., Belmond—unexpired term of W. D. Abbott, M.D.,—2 years
	A. F. Fritchen, M.D., Decorah—unexpired term of E. M. Kersten, M.D. (deceased)—1 year
Speaker of the House of Delegates	Charles V. Edwards, M.D., Council Bluffs
Vice Speaker of the House	Harold W. Morgan, M.D., Mason City
Delegate to the AMA	*Donovan F. Ward, M.D., Dubuque
Alternate Delegate to the AMA	*Frank G. Ober, M.D., Burlington
Councilors: 1st District	R. M. Dahlquist, M.D., Decorah—unexpired term of A. F. Fritchen, M.D.—1 year
3rd District	*Dean H. King, M.D., Spencer
5th District	*Bruce F. Howar, M.D., Webster City
8th District	*John H. Sunderbruch, M.D., Davenport
10th District	*Harold J. Peggs, M.D., Creston

* Re-elected at 1957 Annual Meeting.

The House approved a motion presented by the secretary of the Society on behalf of the Board of Trustees ratifying, confirming and approving the acts of the Trustees and officers of the Society in the conduct of the business of the Iowa State Medical Society during the past year.

Reference Committee Reports

The following reference committee reports were presented and approved by the House of Delegates:

THE JUDICIAL COUNCIL

The Judicial Council, sitting as a reference committee, had referred to it a resolution from the Calhoun County Medical Society. The Judicial Council recommends rejection of this resolution because the "division of fees" principle, stated and implied, is not in accord with the principles of medical ethics of either the Iowa State Medical Society or the American Medical Association.

Gentlemen, I recommend approval of this portion of the report.

The Judicial Council further recommends that the proposed mechanism of payment of more than one physician rendering services to the same patient, as presented in the Iowa Relative Value Fee Schedule (page 57) be further reviewed and clarified by the Fee Committee.

It is our recommendation that this section be reviewed particularly concerning the several skills required when more than one privately practicing physician administers care to one patient in the field of surgery. The principle of a physician being paid for services actually rendered by him shall be reaffirmed.

Gentlemen, I recommend approval of this portion of the report.

Gentlemen, I recommend approval of the report of the Judicial Council as a whole.

E. F. Van Epps, M.D., *Chairman*
Arthur F. Fritchen, M.D.
Jay E. Houlahan, M.D.
Dean H. King, M.D.
Paul W. Brecher, M.D.
Bruce F. Howar, M.D.
Dale Porter, M.D.
John H. Sunderbruch, M.D.
George S. Atkinson, M.D.
Harold J. Peggs, M.D.
Charles H. Flynn, M.D.

THE BOARD OF TRUSTEES

The Board of Trustees meeting as a reference committee considered two resolutions referred to it by the House of Delegates.

The Trustees considered first a resolution from the Cass County Medical Society requesting the president of the Society to appoint a medical defense committee of five members representing the appropriate geographical sections of the state and that a medical defense fund be created by the assessment of $1 per year from each member of the Iowa State Medical Society. The purpose of this medical defense committee would be to assist the members of the ISMS involved in malpractice situations.

After careful study of this resolution the Board of Trustees proposes the following: That the resolution be referred to the existing Medico-Legal Committee for study with advice and counsel of the ISMS attorney. The Board of Trustees calls attention to the fact that Chapter V, Section 10, of the By-Laws makes it possible for the Society to "assist in any lawful or proper manner in the preparation of the defense against claims and suits for civil malpractice presented or brought against any member of this Society in good standing, provided such member shall request the aid of the committee. For this purpose it may incur such expense and cause such disbursements to be made as the committee and the Board of Trustees may approve." For the present the Board of Trustees suggests that the president of the State Society consider enlarging the Medico-Legal Committee from three to five members. These recommendations of the Board of Trustees are submitted in lieu of the resolution proposed by the Cass County Medical Society.

Mr. Speaker, I move the acceptance of this portion of the report.

The Board then considered a resolution from the Kossuth County Medical Society requesting "that the ISMS dues revert to the former level" and finds it necessary to reject it for the reasons outlined in the Supplemental Report of the Board of Trustees which was presented to the House Sunday.

Mr. Speaker, I move acceptance of this portion of the report.

Mr. Speaker, I move acceptance of the report as a whole.

G. H. SCANLON, M.D., *Chairman*
WALTER D. ABBOTT, M.D.
WENDELL L. DOWNING, M.D.
FRED STERNAGEL, M.D.
WILLIAM M. SPROUL, M.D.
RICHARD F. BIRGE, M.D.
N. B. ANDERSON, M.D.

REPORTS OF OFFICERS

This reference committee was required to consider the supplemental report of the secretary of the Society and the supplemental report of the Board of Trustees. We will deal with this in parts.

First of all the supplemental report of the secretary was approved unanimously by the committee with the suggestion that though it is not the prerogative of the secretary to deal with financial matters, we heartily agree that the employees of the Society are being provided with less money than men and women with comparable responsibilities. This matter as described in paragraph 2 of the secretary's report should be seriously considered by the Board of Trustees.

I move you the acceptance of this portion of our report.

This reference committee considered in great detail the supplemental report of the Board of Trustees. We were fortunate in obtaining the advice and a full report from the chairman of the Board of Trustees, your executive secretary, and several others well informed on Society business and finance. We approve of the supplemental report of the Board of Trustees with the exception of paragraphs 5 and 6. Paragraph 5 deals with dues, and paragraph 6 deals with public relations, which subjects we will go into in more detail in the final sections of our report. I move the acceptance of this portion of our report.

In paragraph 5 the Board of Trustees has requested the authority to set the dues at $85 again in 1958. After lengthy discussion and consultation with the aforementioned officers and employees, we are in agreement with this recommendation.

We further recommend that the dues be set at $75 beginning in 1959, this to include the allocation for the Student Loan Fund, and we are prepared to present a motion to this effect when New Business is considered by this House.

I move you the acceptance of this portion of our report.

In pargraph 6 the Board of Trustees has indicated that they intend to make a thorough study of our society's public relations and television activity. We commend them for this intention and hope that their efforts in this study will be as fruitful as their activities in other fields have been in the past.

I move you the acceptance of this portion of our report.

I further more the acceptance of our report as a whole.

D. D. HARRIS, M.D.
L. A. COFFIN, M.D.
E. K. VAUBEL, M.D.
A. F. GRANDINETTI, M.D.
G. W. BENNETT, M.D.

LEGISLATION AND PUBLIC RELATIONS

This report contains the supplemental report of the Public Relations Committee, the report of the Subcommittee on Chronic Illness and the supplemental report of the Committee on Legislation as referred to the Reference Committee on Legislation and Public Relations by the Speaker. After due deliberation this reference committee makes the following recommendations:

On the supplemental report of the Public Relations Committee, we recommend and strongly urge that (1) the Public Relations Committee be continued but suggest that it be cut in numbers to not over five members; (2) that the Public Relations Committee be a vigorously active one and be available in an advisory capacity to any and all committees of the Iowa State Medical Society; (3) that each standing or special committee of the Iowa State Medical Society maintain close liaison with the standing Public Relations Committee of the Iowa State Medical Society. Mr. Speaker, I recommend acceptance of this portion of this report.

The report of the Subcommittee on Chronic Illness: After due deliberation, this committee recommends

that the report be adopted and suggests that (1) the Iowa State Medical Society endeavor to have appointed on the Governor's committee at least one physician, and (2) that the Iowa State Medical Society urge that there be better enforcement of the rules for licensing of nursing and custodial homes. Mr. Speaker, I move approval of this portion of this report.

After deliberation on the supplemental report of the Committee on Legislation as to legislation at the state level, this reference committee suggests that the House of Delegates of the Iowa State Medical Society express thanks to all those who worked so hard for the physician-hospital bill, House File 21. This committee suggests that the Iowa State Medical Society go on record as concurring with House File 466 concerning licensure of foreign trained physicians and license revocation; and further that the pertinent committees of the Iowa State Medical Society make an effort to have the mental health bill, House File 181, be passed by the Senate and also go on record as complimenting the Committee on Mental Health and urging that they continue their efforts. Mr. Speaker, I move adoption of this portion of this report.

After reviewing the reports on legislation at the national level, this committee suggests that the House of Delegates of the Iowa State Medical Society go on record as being opposed to the proposed bills for hospitalization for the aged, dependents, and survivors in H.R. 1097, believing that the major responsibility for and control of this should be at the local level; and further that the Iowa State Medical Society go on record as being opposed to Social Security amendments regarding lowering age limitations on disability benefits, expansion of Medicare program, national compulsory health insurance, increase in wage base and tax under Social Security, and the increase in the budget for the Department of Health, Education and Welfare.

In conclusion we recommend that the legislative contact men and delegates to the American Medical Association be urged to press for passage of the Jenkins-Keogh bill and further that this House of Delegates go on record as concurring with the principle of the poll taken of Iowa doctors to determine their attitude on legislation and recommend that more polls of this type be carried out.

Mr. Speaker, I move adoption of this portion of this report. Mr. Speaker, I move approval of this report as a whole.

C. J. Baker, M.D.
M. E. Alberts, M.D.
John Sunderbruch, M.D.
G. A. Paschal, M.D.
R. W. Boulden, M.D.

MISCELLANEOUS BUSINESS

The Reference Committee on Miscellaneous Business met at 8:30 a.m. on April 29, 1957, to study the following supplementary reports which had been referred to them.

The supplementary report of the Committee on Group Insurance in regard to reopening the Group Accident, Sickness, and Disability Insurance was reviewed and the committee recommends the reopening of enrollment for 60 days following the Annual Meeting. They further recommended looking into other insurance programs and report it at the next Annual Meeting. Your committee recommends acceptance of this supplemental report.

Supplemental Report of the Subcommittee on Rural Health. The Rural Health's 1957 Conference and Critique involving the Rural Health Forum was reviewed. The Subcommittee is commended for its activity and urged to continue its work. The discussion on the preceptor program was actively engaged in, and in addition to the Subcommittee's advice to accelerate this program, the committee has the following suggestion: both participating physicians and the students to engage in the preceptorship should be better prepared for the joint responsibility that they are to undertake. Further, the committee recommends a more realistic approach during the medical school training period in which the medical student is exposed earlier, as a clerk possibly, to practical medical experience in clinical material. Your committee recommends acceptance of this supplemental report with the additional suggestions of the reference committee.

Supplemental Report of the Maternal and Child Health Subcommittee. We recommend the adoption of this report and that the Subcommittee arrange a meeting between the medical profession, welfare, and bar association as requested. Your committee recommends acceptance of this supplemental report.

Supplemental Report of the Osteopathic Committee. This report concerns the ethical relations between doctors of medicine and osteopaths. The committee felt that the report should be adopted and a summary sent to all members of the Iowa State Medical Society. The committee felt that since endeavors to have the osteopaths drop cultism from their practice have failed through the heads of the osteopathic association, it would be best to attempt to eradicate this practice at the grass-roots levels by enforcing the ethical relationship as outlined by the committee. The association between osteopaths and doctors of medicine, theoretically, would be reduced by these practices. The individual doctor of medicine could explain to the osteopath the reason for this ceasing of relationships. When the osteopaths cease to insist that their practice contains something unique or different from the practice of medicine, they will no longer be under the stigma of cultism. The committee recommends the adoption of the supplemental report of the Osteopathic Committee and further recommends the addition of the above explanation to be sent to all members of the Iowa State Medical Society with the summary of the supplementary report. Your committee recommends acceptance of this supplemental report.

Craig D. Ellyson, M.D., *Chairman*
J. K. MacGregor, M.D.
J. W. Ganger, M.D.
C. E. Schrock, M.D.
D. G. Sattler, M.D.

ARTICLES OF INCORPORATION AND BY-LAWS

The Reference Committee on Articles of Incorporation and By-Laws met at 8:30 on Monday morning, April 29, and considered the amendments proposed by the standing committee on Articles of Incorporation and By-Laws. For the convenience of the members of the House of Delegates, the numbers and letters from the standing committee's report will be used in referring to those proposed changes.

The Reference Committee recommends the acceptance of the proposed amendments with slight rewordings in some instances:

1. Relating to the duties of the Secretary of the Iowa State Medical Society: The sentence proposed for insertion in Article IV, Section 10, after the word "treasurer" in line 8, should be altered to read as follows: "He shall be an ex-officio member of all committees of the Society except reference committees of the House of Delegates, but shall not have the right to vote in such committees unless such right is conferred by other provisions of the Articles of Incorporation or By-Laws."

2. Relating to multiple-county societies: The Reference Committee recommends the adoption of the standing committee's report submitted to the House of Delegates on Sunday, April 28.

3. Relating to resident physicians: The Reference Committee recommends the adoption of the standing committee's report submitted to the House of Delegates on Sunday, April 28.

4. Relating to Blue Shield: The Reference Committee recommends the adoption of paragraph (a) as submitted by the standing committee. As regards paragraph (b), the Reference Committee recommends that Chapter V, Section 18 be amended to read as follows: "The Liaison Committee shall consist of three or more members, at least three of whom shall be members of the Board of Trustees. It shall be the duty of the committee to establish cordial relations with other organizations in this state to achieve the purposes and objectives of the Society relative to medical service." The Reference Committee recommends the adoption of paragraph (c), (d) and (e) from this part of the standing committee's report.

5. Relating to life membership: The Reference Committee recommends the adoption of the standing committee's report submitted to the House of Delegates on Sunday, April 28.

6. Relating to nominations: The Reference Committee recommends that Chapter IV, Section 2 of the By-Laws be amended by striking out the last two sentences and inserting in lieu thereof the following: "One such meeting shall be held at a time and place designated by the speaker of the House of Delegates, which meeting shall be open to all members in good standing of this Society. At or before noon of the day preceding the last day of the annual meeting, the committee shall report the result of its deliberations to the members in attendance at the annual meeting in the form of a ticket containing the names of two or more members for the office of President-Elect and one or more members for each of the other offices to be filled at that annual election. Two candidates for President-Elect shall not be named from the same county."

FLOYD BURGESON, M.D., *Chairman*
W. M. KIRKENDALL, M.D.
M. L. SCHEFFEL, M.D.
J. M. TIERNEY, M.D.
C. A. TRUEBLOOD, M.D.

GENERAL PRACTITIONER AWARD

The Reference Committee on the General Practitioner Award met and reviewed the brochure of Dr. Elizabeth Smith Kennedy who was nominated by the Fayette County Medical Society to be named as Iowa's outstanding General Practitioner for 1957 and unanimously approves her selection and requests approval of the committee's action by the House of Delegates.

The committee also requests the Iowa State Medical Society to place the name of Dr. Kennedy in nomination for consideration as the American Medical Association's annual outstanding General Practitioner.

W. A. CASTLES, M.D.
L. H. JACQUES, M.D.
C. L. BAIN, M.D.

INSURANCE AND MEDICAL SERVICE

Your Reference Committee on Insurance and Medical Service held open hearings on Sunday evening and twice on Monday. There was an additional audience given to the Blue Shield Board. Six supplemental reports and twelve resolutions were considered. Two other resolutions had been received by the office of the Iowa State Medical Society but were not presented to the House of Delegates. These were read by your committee but were not subject to official action. From the outset it was evident that a wide breach existed between the sentiments of many members of the Iowa State Medical Society regarding what constitutes satisfactory Blue Shield coverage and the statements made by the Blue Shield Board as to what was necessary for its perpetuation. Because of the tremendous interest in the business before your Reference Committee and because of the controversial nature of this business, it was deemed advisable to use this prologue in an attempt to explain the committee's thinking and its reasons for the ultimate disposal of the problems. Coming as it does at the beginning, this may clarify our action on the several resolutions and supplemental reports.

A number of facets have presented themselves. It is perhaps not sufficiently realized that Blue Shield is a potent factor in good public relations. This is a weapon against the still threatening cloud of state medicine. Let us also retain it to help maintain a good rapport with the public, our patients.

Grumblings are heard that our Blue Shield Board is lay-dominated. Be it remembered that of a roster of 23 Blue Shield Board members, 18 are physicians. Diligence in the selection of the representative from each councilor district should obviate such complaint. The formation of the Liaison Committee with three members each from the Iowa State Medical Society and the Blue Shield Board and the agreed allowance of three physician members from the Medical Society Executive Council to the Blue Shield Board and two directors from the Blue Shield Board to serve as members of the Executive Council and of the House of Delegates makes an entity of sorts from Blue Shield and the Iowa State Medical Society. Thus a society member is not dictated to by third-party outsiders, but by, in effect, that Society to which he belongs.

Another facet coming to light is fear and misunderstanding of the Iowa Relative Value Schedule. At present its main use other than as a possible guide in the physicians' daily practice is its utilization by Medicare.

Pertinent to the discussion were various pitfalls of insurance policies themselves.

Your committee was told that industry is not interested in the offering of a policy with a deductible clause.

Contrariwise, many physicians reject the idea of co-insurance.

Much interest was shown in the comments of our visitors Mr. White and Mr. Doege from Wisconsin. They talked about insurance coverage offered in that state wherein the physician receives his usual fee for any given income range. This type of coverage neces-

sitates a fee committee appointed by the county medical society to judge the propriety of contested fees. In the instance of sparsely populated counties, several could be serviced by a single committee. All this connotes legal responsibility on the part of the county society. It was emphasized that in this circumstance a doctor who receives an adverse action on his fees and who becomes disgruntled could bring action against the county society as well as against Blue Shield.

Fear was expressed by physicians that a successful service contract in the $4,800 income range might stimulate government intervention with compulsory health insurance pegged at the going fee schedule.

Representatives from Blue Shield for their part maintained that it was especially at this income level that the public was becoming more insistent about a full service contract.

At the hearings, physician opposition to a full service contract at the $6,000 income level was so marked that Blue Shield support for this is rapidly becoming feeble.

Very prevalent was the expressed opinion by physicians attending the hearings that Blue Shield insurance should be limited to the present $3,600 full service policy.

In reply, the Blue Shield Board pleaded that there was a lessening appeal of the present offerings and that it would require availability of new policies to meet the increasing appeals and demands for a full service contract at higher income limits. They stated they needed new type policies to meet the competition of commercial carriers in order that Blue Shield may remain solvent. The point was stressed that the Enabling Act by which Blue Shield was created insists upon the offering of a full service policy within the income level limitations.

This then is the background, and the two-sided challenge handed to your reference committee.

Mr. Speaker, I move the acceptance of this portion of our report.

I. To answer this challenge your committee offers the following recommendations: That the Blue Shield Board—

(a) offer the proposed full service contract at the $3,600 income level, including the revised benefits involving intensive care to patients in critical condition; unusual care over and above in-hospital benefits; consultation; surgical services including surgical assistant, preoperative and postoperative care in the hospital; concurrent services by two or more doctors by reason of necessity of supplemental skills; obstetrical services on family contract only; anesthesia services; radiation therapy; emergency first aid of accidental injury within 24 hours of accident; diagnostic x-ray and pathological examinations in connection with accidents, up to $50 per accident; and to provide supplemental contracts for radiology and pathology services as diagnostic outpatient services to be written as available diagnostic riders on this and the following policies.

(b) provide a policy paying the physicians' usual equitable fee (and with a reasonable maximum benefit), and including the above revised benefits.

(c) provide a policy like the last preceding one, but with a deductible clause.

Your committee recommends acceptance of this recommendation.

Mr. Speaker, I move the acceptance of this portion of our report.

II. *Supplemental Report of the Secretary:* Your Reference Committee recommends the acceptance of that portion of the report pertaining to Blue Shield.

Mr. Speaker, I move the acceptance of this portion of our report.

III. *Supplemental Report of the Committee on Legislation:* The Reference Committee wishes to commend especially the graphic presentation of facts pertaining to the Blue Shield problem by the use of lantern slides. Your committee recommends the acceptance in principle of that portion of the report dealing with Blue Shield.

Mr. Speaker, I move the acceptance of this portion of our report.

IV. *Supplemental Report of the Committee on Medical Services:* This fine report covers problems of Blue Shield as they involve changing economic conditions.

Your committee recommends the acceptance of this portion of our report.

Mr. Speaker, I move the acceptance of this portion of our report.

V. *Supplemental Report of the Committee on Prepayment Medical Care:* This report is accompanied by long desired simplified insurance forms.

Your Reference Committee recommends acceptance of this report.

Mr. Speaker, I move the acceptance of this portion of our report.

VI. *Prepayment Insurance Committee's Supplemental Report on Blue Shield:* In view of the fact that your committee has proposed the development of a Blue Shield program not wholly in accord with that described in this supplemental report, your committee recommends not accepting this report.

Mr. Speaker, I move the acceptance of this portion of our report.

VII. *Supplemental Report of the Fee Committee:* Your Reference Committee recommends accepting this report.

Mr. Speaker, I move the acceptance of this portion of our report.

VIII. *Resolution of Wapello County Medical Society:*

Resolved, That the Iowa State Medical Society oppose the projected Blue Shield contracts offering full service coverage above the indigent wage level.

Your committee recommends not accepting this resolution.

Mr. Speaker, I move the acceptance of this portion of our report.

IX. *Resolution of Cedar County Medical Society:*

Therefore Be It Resolved, That the Cedar County Society hereby approve the adoption of the Iowa Relative Value Schedule to be used as a basic standard for Blue Shield contract offerings, and

Be It Further Resolved, That the Cedar County Society approve the principle of varying full service offerings at proportionate valuations of the unit to allow the physician his usual fee based on the income of his patient, and

Be It Resolved, That the Cedar County Medical Society support Blue Shield in its efforts to keep medicine a service agreement between doctor and patient without further interference from government agencies, and

Be It Resolved, That a resolution requesting Blue Shield to provide immediately plans drafted especially for the aged group over 65 years, and

Be It Finally Resolved, That the Blue Shield Board should be complimented for their fine efforts and valuable time spent away from their practice in the interest of the medical profession of the great state of Iowa.

Your committee recommends that the first portion of this resolution not be accepted, that the second portion of the resolution not be accepted, that the third portion of the resolution be accepted, and that the

fourth part of the resolution not be accepted, because Blue Shield will be asked to explore this field, and that the fifth part of the resolution be accepted.

(Instead of rejecting the first portion of the Cedar County Resolution as proposed by the Reference Committee, the House of Delegates amended it to make clear that the hands of the Blue Shield Board were not to be tied in the use of the Iowa Relative Value Fee Schedule and that it need use it only as a guide.)

Mr. Speaker, I move the acceptance of this portion of our report, as amended.

X. *Resolution of the Johnson County Medical Society:*

Now Therefore, Be It Hereby Resolved, That the House of Delegates instruct the Blue Shield Board to (1) correct the present inequities of the now existing Blue Shield fee schedule at the $3,600 income level, (2) offer no full service contracts above the $3,600 income level and (3) continue to investigate deductible and co-insurance and other indemnity plans, all on a "non-fee schedule basis," these plans to be offered for those who desire additional coverage.

Your committee recommends that the first portion of the resolution be accepted, that the second portion of the resolution be not accepted, and that the third portion of the resolution be not accepted, because of trial of proposed plans.

Mr. Speaker, I move the acceptance of this portion of our report.

XI. *Resolution of Scott County Medical Society:*

The Scott County Medical Society offers its vigorous support of a Blue Shield policy embodying a deductible and co-insurance feature as being fair, reasonable in cost, and preserving for the individual some responsibility for himself and his family. This type of policy serving families of over $3,600 yearly income is to supplement the present full service contract to families whose annual income is $3,600 or less.

Your committee recommends acceptance of that portion of the resolution applying to the deductible insurance feature.

Mr. Speaker, I move the acceptance of this portion of our report.

XII. *Resolution of Jefferson County Medical Society:*

The Jefferson County Medical Society is opposed to the full coverage contract currently being proposed by the Blue Shield and Blue Cross. We feel there are many valid objections to this contract that have been raised by the opponents of such a plan. Our main objection is that this will violate the basic proposition on which Blue Shield and Blue Cross was originally formulated; that is low cost hospital and medical-surgical coverage for patients of a low income group. We further feel that the present limits of $3,600 should be adhered to in future contracts. This resolution was endorsed by all members of the medical society.

Your committee recommends that this resolution not be accepted.

Mr. Speaker, I move the acceptance of this portion of our report.

XIII. *Resolution of Hamilton County Medical Society:*

Resolved, That the Hamilton County Medical Society hereby requests that Blue Shield present to the public *as soon as possible* two (2) or more maximum liability insurance plans with deductible and/or co-insurance features, and be it

Resolved Further, That Blue Shield continue to offer the present 1953 Blue Shield full service liability certificate *without* deductible and/or co-insurance benefits for the protection of the usually defined medical borderline indigent group.

Your committee recommends acceptance of this resolution, amended to delete the words "and/or co-insurance."

(The House amended the final paragraph of this resolution by striking out the words following "the protection of," and substituting the words "those in an income group of $3,600 or less annually.")

Mr. Speaker, I move the acceptance of this portion of our report, as amended.

XIV. *Resolution of the Black Hawk County Medical Society:*

Now Therefore, Be It Hereby Resolved, That the House of Delegates instruct the Blue Shield Board (1) that the proposed Plan A 300 and Plan AD 300 with service income level at $3,600 be put into effect for the purpose of caring for the medically indigent, (2) that the proposed Plans B 400, BD 400, C 500 and CD 500 be rejected, and (3) that simple indemnity contracts be written.

Dr. Eller further moved that this society go on record as favoring further investigation, on a pilot-plan basis, of Plans F, G, H and XL as presented in the recent communication from Blue Shield. The motion was carried unanimously.

Your committee recommends not accepting the first portion of the resolution, accepting the second portion of the resolution, not accepting the third portion of the resolution and accepting Plans F and XL in the final paragraph.

Mr. Speaker, I recommend the acceptance of this portion of our report.

XV. *Resolution of Webster County Medical Society:*

Now Therefore, Be It Hereby Resolved, That Blue Shield be directed to continue the $3,600 full service plan without extension, and

Be It Further Resolved, That Blue Shield be directed to concentrate on alternative plans which preserve the fee for service principle without a fee schedule.

(The House amended the first paragraph of this resolution striking out the words following "full service plan," and substituting the words "with extension in accordance with the provisions of the supplemental report of the Reference Committee.")

Your committee recommends acceptance of this resolution, as amended.

Mr. Speaker, I recommend the acceptance of this portion of our report, as amended.

XVI. *Resolution of Polk County Medical Society:*

Now Therefore, Be It Hereby Resolved, That the Polk County Medical Society approves the new higher income level contracts which have been developed by Blue Shield and requests the House of Delegates of the Iowa State Medical Society to take similar action, and

Be It Further Resolved, That Blue Shield continue its studies relative to the introduction of programs to which a fixed fee schedule is not applied, and that as soon as appropriate contracts are perfected they should be offered as pilot programs in the various parts of Iowa where the doctors are willing to participate in the experiment, and

Be It Finally Resolved, That Blue Shield be requested to develop adequate catastrophic programs to supplement its basic contracts; to expand its out-patient diagnostic benefits; to join with Blue Cross and committees of their two respective sponsoring organizations to determine the feasibility of extending Blue Cross-Blue Shield benefits to the aged who are not presently eligible for enrollment.

Your committee recommends not accepting the first part of the resolution, accepting the second portion of the resolution and accepting, in principle, the third portion of the resolution.

Mr. Speaker, I move the acceptance of this portion of our report.

XVII. *Resolution of Page County Medical Society:*

Therefore Be It Resolved, That the proposed Blue Shield plans be approved by the House of Delegates in essence, but

Be It Further Resolved, That the value of the unit in the lowest paying plan be raised to a figure more in keeping with the present economy, and also

Be It Further Resolved, That provision be allowed for change in the value of the unit in accordance with the economic picture on an at least yearly basis.

Your committee recommends that this resolution not be accepted.

Mr. Speaker, I move the acceptance of this portion of our report.

XVIII. *Resolution of Pocahontas County Medical Society:*

Therefore Be It Resolved, That the Pocahontas County Medical Society hereby request Blue Shield to offer to the Public various insurance contracts utilizing the Iowa Relative Value Schedule to determine unit values coordinated by income levels as follows:
$3 per unit—$3,600 family annual income
$4 per unit—$4,800 family annual income
$5 per unit—$6,000 family annual income, and
Be It Further Resolved, That deductible and/or co-insurance variables be applied to above contracts if necessary to better serve the interest of the public and medical profession in Iowa.

Your committee recommends that this resolution not be accepted.

Mr. Speaker, I move the acceptance of this portion of our report.

XIX. *Resolution of Calhoun County Medical Society:*

Your committee yields this resolution to the Judicial Council and recommends the acceptance of their opinion.

Mr. Speaker, I move the acceptance of this portion of our report.

Before concluding, your committee would like to make some additional recommendations to Blue Shield. We would like to suggest more frequent evaluation of Blue Shield benefits in the light of the current economy.

The committee would suggest exploration of health insurance for the age group over 65 years.

We would like to suggest more careful presentation by the sales force, to assure an understanding of the benefits provided by a policy.

The committee wishes to commend the Blue Shield Board for their work on the ill-fated instructions they received from the 1956 House of Delegates. We further wish to give them a vote of confidence that they can implement the present proposals.

Your reference committee has endeavored to evolve a plan which can be conscientiously approved by the House of Delegates and which, at the same time, allows for survival of Blue Shield. It is suggested that the proposed plans be instituted for a two year period, during which time they can be studied and necessary adjustments determined.

Mr. Speaker, I move the acceptance of this portion of the report.

Mr. Speaker, I move the acceptance of this report as a whole, as amended.

I wish to commend the indulgence and endurance of my committee. I wish to express my appreciation of their perseverance and thoughtful study of issues which have enabled us to develop this report.

C. H. Flynn, M.D., *Chairman*
P. W. Brecher, M.D.
R. L. Wicks, M.D.
A. B. Hendricks, M.D.
D. F. Crowley, M.D.
A. C. Bergstrom, M.D.
J. E. Blumgren, M.D.

The House of Delegates approved Des Moines as its convention site in 1959.

On a motion presented by Dr. G. C. Albright of Iowa City, Dr. Herman Smith was commended and given a standing ovation for his outstanding work as Speaker of the House of Delegates.

A resolution was presented by Dr. D. D. Harris, delegate from Marshall County Medical Society. It reads as follows:

(This resolution was referred to the Board of Trustees for study and report at the 1958 annual meeting.)

Whereas, It has been the recommendation of the Board of Trustees and the finding of your Reference Committee on Reports of Officers, previously approved by this House this morning, I hereby move that the annual dues for the active members of this Society be set at $85 for the year of 1958.
I further move that future houses of delegates seriously consider the recommendation of your reference committee, previously approved by this House that future dues be set at $75 beginning in 1959.

The House again extended its thanks to Blue Cross-Blue Shield for the lounge provided during the annual meeting and expressed its appreciation to Blue Shield for the services of Messrs. Wilbur R. Quinn, Kenneth Clark, Morris Bandy and Merle Libby as sergeants at arms.

On a motion presented by Dr. R. F. Birge, secretary, Dr. Wendell Downing, president of the Iowa State Medical Society, was commended by the House of Delegates for his contribution to organized medicine in Iowa and the nation.

The following resolutions were presented by Dr. Oscar Alden, delegate, Montgomery County Medical Society:

(Referred to the Committee on Articles of Incorporation and By-Laws.)

I hereby move that the Committee on Articles of Incorporation and By-Laws be directed to submit to the House of Delegates at the next Annual Meeting such amendments to the Articles of Incorporation and By-Laws as may be required to create the status of honorary membership in the Iowa State Medical Society.

Resolved, That the Iowa State Medical Society extend its thanks and appreciation to the exhibitors who provide financial support to the annual meeting.

(This second resolution was adopted without referral.)

The House of Delegates was adjourned by the Speaker at 10:00 a.m.

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IOWA STATE MEDICAL SOCIETY

Officers and Committees, 1957-1958

President.....Fred Sternagel, West Des Moines
President Elect.....Walter D. Abbott, Des Moines
Vice President.....Rubin H. Flocks, Iowa City
Secretary.....Richard F. Birge, Des Moines
Treasurer.....N. Boyd Anderson, Des Moines
Speaker of the House of Delegates,
Charles V. Edwards, Council Bluffs
Vice Speaker of the House of Delegates,
Harold W. Morgan, Mason City

COUNCILORS

	Term Expires
First District, Ralph M. Dahlquist, Decorah	1958
Second District, Jay E. Houlahan, Mason City	1959
Third District, Dean H. King, Spencer	1960*
Fourth District, Paul W. Brecher, Storm Lake	1958
Fifth District, Bruce F. Howar, Webster City	1960*
Sixth District, S. Dale Porter, Grinnell	1958
Seventh District, Christian E. Radcliffe, Iowa City	1959
Eighth District, John H. Sunderbruch, Davenport	1960*
Ninth District, George S. Atkinson, Oskaloosa	1959
Tenth District, Harold J. Peggs, Creston	1960*
Eleventh District, Charles H. Flynn, Clarinda	1958

TRUSTEES

George H. Scanlon, Iowa City, Chairman	1960*
Arthur F. Fritchen, Decorah	1958
Samuel P. Leinbach, Belmond	1959

DELEGATES TO AMA

	Term Expires
Donovan F. Ward, Dubuque	January 1, 1960*
Robert N. Larimer, Sioux City	January 1, 1959
Francis C. Coleman, Des Moines	January 1, 1959

ALTERNATE DELEGATES TO AMA

	Term Expires
Frank G. Ober, Burlington	January 1, 1960*
Callistus H. Stark, Cedar Rapids	January 1, 1959
Henning W. Mathiasen, Council Bluffs	January 1, 1959

EXECUTIVE COUNCIL

Fred Sternagel, Chairman	West Des Moines
Walter D. Abbott	Des Moines
Rubin H. Flocks	Iowa City
Richard F. Birge	Des Moines
N. Boyd Anderson	Des Moines
Charles V. Edwards	Council Bluffs
George H. Scanlon	Iowa City
Arthur F. Fritchen	Decorah
Samuel P. Leinbach	Belmond
Ralph M. Dahlquist	Decorah
Jay E. Houlahan	Mason City
Dean H. King	Spencer
Paul W. Brecher	Storm Lake
Bruce F. Howar	Webster City
S. Dale Porter	Grinnell
Christian E. Radcliffe	Iowa City
John H. Sunderbruch	Davenport
George S. Atkinson	Oskaloosa
Harold J. Peggs	Creston
Charles H. Flynn	Clarinda
Donovan F. Ward	Dubuque
Robert N. Larimer	Sioux City
Francis C. Coleman	Des Moines
Tom D. Throckmorton	Des Moines
John W. Billingsley	Newton

* Re-elected at 1957 annual meeting

THE JOURNAL

Everett M. George Des Moines

Standing Committees of the Iowa State Medical Society

Committee on Scientific Work

Fred Sternagel, Chairman	West Des Moines
W. D. Abbott	Des Moines
R. F. Birge	Des Moines
N. B. Anderson	Des Moines

Committee on Legislation

F. C. Coleman, Chairman	Des Moines
Fred Sternagel	West Des Moines
W. D. Abbott	Des Moines
L. A. Coffin	Farmington
N. W. Irving	Des Moines
J. E. Kelsey	Des Moines
R. L. Wicks	Boone
G. E. McFarland, Jr.	Ames
D. O. Newland	Des Moines

Medico-Legal Committee

V. C. Robinson, Chairman	Des Moines (1959)
J. C. Nolan	Corning (1960)
L. D. Powell	Des Moines (1958)
H. H. Allen	Fort Dodge (1958)
J. D. Conner	Nevada (1959)

Committee on Articles of Incorporation and By-Laws

P. F. Chesnut, Chairman	Winterset
R. H. Kuhl	Creston
C. E. Knouf	Lake City
E. G. Kettelkamp	Monona
D. C. Koser	Cherokee

Committee on Medical Service

C. H. Stark, Chairman	Cedar Rapids
W. C. Eller	Waterloo
R. C. Gutch	Chariton
W. L. Downing	Le Mars
Isaac Sternhill	Council Bluffs

Subcommittee on Prepayment Medical Care

W. C. Eller, Chairman	Waterloo
R. E. Smiley	Mason City
T. W. McMeans	Davenport
C. A. Nicoll	Panora
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April 20-23

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Dahl, Harry W., Des Moines
Dahlbo, John E., Sutherland
Dahlquist, Ralph M., Decorah
Dalager, Robert D., Ottumwa
Dalbey, Glenn M., Traer
Danielson, May, Clinton
Dannenbring, Forrest G., Fort Dodge
Darrow, Clarence A., Dubuque
Daut, Richard V., Davenport
Daut, Walter W., Muscatine
Davey, William P., Sioux City
Davidson, Thorald E., Mason City
Dawson, Emerson B., Fort Dodge
*Dawson, Leon E., Des Moines (A.M.)
Dawson, Robert J., Graettinger
Day, Philip M., Oskaloosa
★Day, Richard T., New York, New York
Deakins, Martin L., Logan
Dean, Abbott M., Council Bluffs
Dean, William F., Osceola (L.M.)
Deaton, Helen J., Iowa City
Decker, Charles E., Davenport
Decker, Henry G., Des Moines
Decker, Jay C., Sioux City (L.M.)
DeGowin, Elmer L., Iowa City
Demaree, Chester, Lacona (L.M.)
De Meulenaere, John C., Grinnell
Dempewolf, Robert D., Bellevue
Dennert, Walter G., Boone
Deranleau, Robert F., Perry
DeShaw, Earl H., Monticello
Des Marias, Varina, Grundy Center
Devine, Arthur W., Waterloo
Devine, James S., Whittemore
Dewees, Frank L., Keokuk
Dewey, Jay R., Schaller
DeYoung, Ward A., Glenwood
Diamond, Bernard V., Waterloo
Dick, Fred, Jr., Waterloo
Dickens, James H., Des Moines
Diddy, Keith W., Perry
Dierker, LeRoy J., Fort Madison
Dimsdale, Lewis J., Sioux City
Dingman, Marshall E., Urbana (L.M.)
Ditto, Boyd L., Burlington
Ditto, Winston B., Burlington
Doane, Grace O., Des Moines
Dodge, Lynn Q., Ames
Doering, Valentine T., Fort Madison (A.M.)
Dolan, Albert M., Waterloo
Dolan, Thomas R., Monticello
Dolmage, George F., Buffalo Center
Donahue, James C., Centerville
Donahue, James C., Jr., Davenport
Donlin, Robert E., Harlan
Donnelly, Madelene M., Des Moines
Donohue, Edmund S., Sioux City
Doolittle, Russell C., Clearwater, Florida (L.M.)
Doran, John R., Ames
Dorner, Ralph A., Des Moines
Dorsey, Thomas J., Fort Dodge
Doss, W. Gordon, Cresco
Doss, W. Norman, Leon
Down, Howard I., Sioux City
Downey, Eugene M., Guttenberg
Downing, Arthur H., Des Moines
Downing, John S., Cedar Rapids
Downing, Leroy M., Cedar Rapids (L.M.)
Downing, Wendell L., LeMars
Downs, Vernon S., Ottumwa
Doyle, Joseph L., Sigourney
Dressler, John B., Ida Grove
Drew, Edward J., Des Moines
Drier, William C., Waterloo
Driver, Richard W., Waterloo
Drown, Roger E., Fort Dodge
Dubansky, Marvin H., Des Moines
Duewall, Rudolph H., West Des Moines
Dulin, Evelyn H., Iowa City
Dulin, John W., Iowa City
Dulin, Tarana J. G., Iowa City (L.M.)
Duling, Raymond J., Sioux City
Dulmes, Abraham H., Klemme
Dunlevy, James H., Fairfield
Dunn, Dale E., Estherville
Dunn, Francis C., Cedar Rapids
Dunn, James, Davenport (L.M.)
Dunn, Robert C., Fort Dodge
Dunner, Ada, Des Moines
Dusdieker, Stanley W., Des Moines
Dutton, Dean A., Van Horne
Dwyer, Bernard B., Clinton
Dwyer, Robert E., Clinton
Dyson, James E., Des Moines
Dyson, Ralph E., Des Moines

Eastburn, Harvey B., Burlington
Eaton, Robert C., Clarion
Ebinger, Edward W., Ottumwa
Echternacht, Arthur P., Fort Dodge
Eckart, Emile P., Fort Dodge
Eckberg, Richard A., Madison, Wisconsin
Eckhardt, Richard D., Iowa City
Eckstein, John W., Iowa City
Edelman, David L., Des Moines
Edgerton, Winfield D., Davenport

Edington, Frank D., Spencer
Edwards, Charles C., Des Moines
Edwards, Charles V., Council Bluffs
Edwards, John F., Clinton
Edwards, Ralph R., Centerville
Egan, Thomas J., Bancroft
Egbert, Daniel S., Fort Dodge
Egermayer, George W., Elliott (L.M.)
Eggleston, Alfred A., Burlington
Egloff, William C., Mason City
Ehrenhaft, Johann L., Iowa City
Eicher, Charles R., Iowa City
Eiel, John O., Osage
Eiel, Merrill O., Osage
Eisenach, John R., Shenandoah
Ekart, Paul I., Ottumwa
Elkins, Higdon B., Iowa City
Eller, Lancelot W., Kanawha
Eller, William C., Waterloo
Elliott, Olin A., Des Moines
Ellis, Howard G., Des Moines
Ellis, Philip P., Iowa City
Ellison, George M., Clinton
Ellsworth, H. Charles, Cherokee
Ellyson, Charles W., Waterloo (L.M.)
Ellyson, Craig D., Waterloo
Ely, Lawrence O., Des Moines
Emanuel, Dennis G., Ottumwa
Emerson, Edward L., Muscatine
Emmons, Marcus B., Clinton
Emmons, Margaret S., Clinton
Emmons, Richard O., Clinton
Eneboe, Edward M., Hawarden
Engelmann, Andrew T., Sioux City
Enggas, John T., Britt
Englund, Philip M., Burlington
Enna, Melchior D., Dumont
Ennis, Harry H., Manchester
Ensley, Bruce, Shell Rock (L.M.)
Entringer, Albert J., Dubuque
Entz, F. Harold, Waterloo
Enzinger, Franz M., Washington, D. C.
Erickson, Ernest D., Sioux City
Ericsson, Martin G., Cedar Falls
Erikson, Roland E., Davenport
Esders, Martin S., DeWitt
Estes, Maurice, Cedar Rapids
Evans, John E., Winterset
*Evans, John G., New Hartford (L.M.)
Evans, William I., Sac City
Evers, Alvin E., Pella

Faber, Luke A., Dubuque
Faber, Luke C., Iowa City
Fail, Charles S., Adel
Fallows, Howard D., Mason City (L.M.)
Fangman, Charles A., Coon Rapids
Farago, Denes S., Arnolds Park
Farlow, Charles T., Farnhamville (L.M.)
Farnsworth, Harold E., Storm Lake
Farrage, Edward R., Council Bluffs
Faust, John H., Manson
Fee, Charles H., Denison
Fee, Knight E., Toledo
Feightner, Robert L., Fort Madison
Feldick, Harley G., Buffalo Center
Fellows, Joseph G., Ames
Felter, Allan G., Van Meter
Fenton, Charles D., Bloomfield
Fenton, Robert L., Centerville
Ferguson, John W., Newton
Ferguson, Paul, Lake City
Ferlic, Rudolph J., Carroll
Fesenmeyer, Charles R., Davenport
Fickel, Jack D., Red Oak
Field, Charles A., Cresco
Field, Grace E. W., Juneau, Alaska
Fieseler, Walter R., Fort Dodge
Fieselmann, George F., Spencer
Fillenwarth, Floyd H., Charles City
*Finch, George H., Des Moines
Fisch, Roman J., LeMars
Fischer, Harry W., Iowa City
Fisher, June M., Iowa City
Fisher, William A., Creston
Fishman, Harlow J., Cherokee
Fisk, Charlotte, Des Moines
Fitch, Robert E., Des Moines
Fitzgerald, Joseph D., Sloan
Flannery, Francis E., Cedar Rapids
Flater, Norman C., Floyd
Fleming, Edward F., Rockwell
Flickinger, Roger R., Mason City
Flocks, Rubin H., Iowa City
Floersch, Eugene B., Council Bluffs
Floyd, Mark L., Iowa City
Flynn, Charles H., Clarinda
Flynn, Gordon A., Davenport
Flynn, James R., Cedar Rapids
Foley, Robert J., Davenport
Foley, Walter E., Davenport
Foley, Walter E., Jr., Davenport
Fomon, Samuel J., Iowa City
Ford, James C., Boone
Fordyce, Frank W., Des Moines
Forsythe, Dorothy C., Newton
Forsythe, Frank E., Newton
Foss, John F., Burlington
Foster, Morgan J., Cedar Rapids
Foster, Samuel T., Adel (L.M.)
Foster, W. John, Cedar Rapids
Foster, Wayne J., Cedar Rapids
Foster, Warren H., Clinton
Foulk, Frank E., Backus, Minnesota (L.M.)
Fowler, Willis M., Iowa City
Fox, Charles I., Pella (L.M.)
Fox, Ray A., Charles City
Fox, Stephan, Ottumwa
Franchere, Chetwynd M., Mason City
Franey, William E., Cedar Rapids
Frank, Louis J., Sioux City
Frank, Owen L., Maquoketa
Fraser, James B., Des Moines
Fraser, John H., Monticello
Frazier, Robert G., Iowa City
Frech, Raymond F., Newton
Frederickson, Adolph R., Lansing
Freed, David A., West Union
French, Royal F., Marshalltown
French, Valiant D., Cedar Falls
French, Vera V., Davenport
Frenkel, Hans S., Clarinda
Friday, Walter C., Burlington
Fridell, Glen W., Slater
Frink, Lyle F., Spencer
Frink, Lynn E., Reinbeck
Fritchen, Arthur F., Decorah
From, Paul, Des Moines
Frost, Loraine H., Iowa City
Fry, Gerald A., Vinton
Fuerste, Frederick, Jr., Dubuque
Fuller, Lyle R., Garner
Fullerton, Oscar L., Redding (L.M.)
Funk, David C., Iowa City
Furumoto, Kiyoshi, Keosauqua

*Gaard, Rasmus R., Radcliffe (L.M.)
Gacusana, Jose M., Akron
Galinsky, Leon J., Des Moines
Gallagher, John P., Oelwein
Gamet, Elmo E., Lamoni
Gangeness, Leonard G., Des Moines
Gann, Edward R., Sigourney
Gannon, James, Laurens
Gantz, A. Jay, Greenfield
Ganzhorn, Harold L., Mapleton
Gardner, Harold O., Waterloo
Gardner, John R., Lisbon (L.M.)
Garland, John C., Marshalltown
Garred, John L., Whiting
Garred, William P., Onawa
Garvy, Andrew C., Iowa City
Gauger, John W., Early
Gaukel, Leo A., Onawa
Gault, James B., Creston
Gearhart, George W., Springville (L.M.)
Gee, Kenneth J., Shenandoah
Gelfand, Arthur B., Sioux City
Gelman, Webster B., Iowa City
George, Everett M., Des Moines
George, Louis A., Remsen
Gerard, Russell S., II, Waterloo
Gerken, James F., Waterloo
Gernsey, Merritt N., Long Beach, California (L.M.)
Gerstman, Herbert, Marion
Gessford, Howard H., George
Getty, Everett B., Primghar
Gibbon, William H., Sioux City
Gibbs, George M., Burlington
Gibson, Chelsea D., Sac City
Gibson, Douglas N., Des Moines
Gibson, Paul E., Des Moines
Gibson, Preston E., Davenport
Giegerich, Walter F., Atlantic
Gildea, Dorothy J., Davenport
Giles, Francis E., Fort Dodge
Giles, W. Clark, Council Bluffs
Gilfillan, Clarence D. N., Bloomfield
Gilfillan, Earl E., Bloomfield
Gilfillan, Edwin O., Bloomfield
Gilfillan, Homer J., Jr., Bloomfield
Gillett, Francis A., Oskaloosa (L.M.)
Gillett, R. Giles, Sigourney
Gillies, Carl L., Iowa City
Gillmore, Benjamin F., Red Oak (L.M.)
Gingles, Earl E., Onawa
Ginzberg, Fanny T., Cherokee
Gittins, Thomas R., Sioux City
Gittler, Ludwig, Fairfield
Gius, John A., Iowa City
Givens, H. Frank, West Bend (L.M.)
Gleeson, John J., Vail
Glenn, David H., Eldora
Glesne, Otto N., Fort Dodge
Glick, Julius, Clinton
Glissman, Jean B., Des Moines
Gloeckler, Bernhard B., Oakdale
Glomset, Daniel A., Des Moines
Glomset, Daniel J., Santa Barbara, California (L.M.)
Goad, Robley R., Muscatine
Goddard, Chester R., Iowa City
Goddard, William B., Iowa City
Goebel, Clarence J., Sioux City
Goebel, Kenneth E., Council Bluffs
Goen, Edwin J., Charles City
Goenne, Richard E., Davenport
Goenne, William C., Sr., Davenport
Goggin, John G., Ossian
Goldberg, Louis, Des Moines
Goldman, Bernard R., Davenport
★Goldstein, Morton S., Centerville
Goodenow, Sidney B., Colo
Goodman, Lawrence O., Marshalltown
Goplerud, Clifford P., Iowa City
Gordon, Arnold M., Des Moines
Gorrell, Ralph L., Clarion
★Goslin, Fred B., Biloxi, Mississippi
Gottsch, Edwin J., Shenandoah
Gottsch, Joseph C., Philadelphia, Pennsylvania
Gould, George R., Grundy Center (L.M.)
Gower, Walter E., Fort Dodge
Graham, James W., Sioux City
Grandinetti, Arthur F., Oelwein
Grant, John G., Ames
Grau, Amandus H., Denison
Graves, John P., Dubuque
Gray, Gordon W., Davenport
Gray, John F., Melcher (L.M.)
Gray, Ralph E., Eldora
Greco, Louis R., Jr., Boone
Green, David, Iowa City
Green, Don C., Des Moines
Green, John W., Jr., Des Moines
Greenblatt, Jerald, Cedar Rapids
Greenhill, Solomon, Des Moines
Greenleaf, John S., Iowa City
Gremel, Norman A., Iowa City
Greteman, Theodore J., Dubuque
Griesy, Carl V., West Union
Griffin, Charles C., Dyersville
Griffin, Frank L., Des Moines (L.M.)
Griffin, Robert E., Sheldon
Griffith, Wylie H., Clinton
Griffith, William O., Council Bluffs
Grimmer, George T., Charles City
Groben, Elmer S., Columbus Junction
Grossman, Milton D., Sioux City
Grossman, Raymond S., Marshalltown
Grossmann, Edward B., Orange City
Grubb, Merrill W., Galva
Grundberg, Gerhard, Dows
Gugle, Lloyd J., Ottumwa
Gurau, Henry H., Des Moines
Gustafson, John E., Des Moines
Gutch, Roy C., Chariton
Gutch, Thomas E., Albia (L.M.)
Gutenkauf, Charles H., Des Moines

Hach, Felix T., Ankeny
Hagen, Edward F., Decorah
Haggar, David K., Hawarden
Haines, Diedrich J., Des Moines
Hake, Dexter H., Knoxville
Hale, Albert E., Mason City
Hall, Forest F., Dunedin, Florida (A.M.)
Hall, Bonnybel A., Maynard
Hall, Cluley C., Maynard
Hallam, F. Tulley, Des Moines
Hallberg, Harold C., Oelwein
Halloran, William H., Audubon
Halpin, Lawrence J., Cedar Rapids
Hamilton, Ben C., Jr., Jefferson
Hamilton, Cecil V., Ames
Hamilton, Henry E., Iowa City
Hamilton, William K., Iowa City
Hansell, William W., Des Moines
Hansen, Fred A., Red Oak
Hansen, Niels M., Des Moines
Hansen, Robert R., Marshalltown (L.M.)
Hansen, Russell R., Storm Lake
Hanske, Edward A., Minneapolis, Minnesota
Hanson, Carl A., Waterloo
Hanson, Henry M., Waverly
Hanson, Walter N., Mason City

Hanssmann, Irving J., Council Bluffs
Hardin, John F., Bedford
Hardin, Robert C., Iowa City
Harding, Dale A., Eagle Grove
Hardwig, Oswald C., Waverly
Hardwig, Robert P., Waverly
Harken, Conreid R., Osceola (L.M.)
Harkness, Gordon F., Davenport (L.M.)
Harman, Dean W., Glenwood
Harms, George E., Norway
Harnagel, Edward J., Des Moines
Harper, George E., Fort Madison
Harper, Harry D., Fort Madison
Harper, William H., Jr., Keokuk
Harrington, Arlan F., Cedar Rapids
Harrington, Louis E., Danbury
Harrington, Raymond J., Sioux City
Harris, D. Dale, Marshalltown
Harris, Grove W., Marshalltown (L.M.)
Harris, Jack T., Cedar Falls
Harris, Ray R., Dubuque (L.M.)
Hart, Paul V., Des Moines
Hartley, Byron D., Mount Pleasant
Hartman, Frank T., Waterloo (L.M.)
Hartman, Howard J., Waterloo
Hartung, Walter, Davenport
Harvey, Glen W., Cedar Rapids
Harwood, Arthur M., Waverly
Hastings, Richard A., Ottumwa
Haufe, W. David, Bloomfield
Hausheer, Herman J., Mount Ayr
Havlik, Al J., Tama
Hawkins, Charles P., Clarion
Hayden, Milford D., Marcus
Hayes, William P., Cedar Rapids
Hayne, Robert A., West Des Moines
Hayne, Willard W., Des Moines
Hazlet, Kenneth K., Dubuque
Hea, James J., Guttenberg
Heady, Conda C. C., Bloomfield (L.M.)
Heald, Clarence L., Sigourney (L.M.)
Hecker, John T., Cedar Rapids
Heeren, Ralph H., Des Moines
Heffernan, Chauncey E., Sioux City
★Heffron, John F., Omaha, Nebraska
Hegg, Lester R., Rock Valley
Hegstrom, George J., Ames
Heilman, Elwood H., Ida Grove
Heilman, Robert D., Sioux City
Heimann, Verne R., Sioux City
Heise, Carl A., Jr., Jewell
Heise, Harris R., Marshalltown
Heise, Robert H., Story City
Heitzman, Paul O., Cedar Rapids
Helling, Harry B., Fort Madison
Helseth, Carleton T., Des Moines
Helt, Vernon G., Moville
Henderson, Lauren J., Cedar Falls
Henderson, Walker B., Oelwein
Hendricks, Atlee B., Davenport
Hendrickson, Alvin H., Sioux City
Henkin, John H., Sioux City
Hennes, Raphael J., Oxford
Hennessey, John M., Manilla
Hennessy, Felix A., Calmar (L.M.)
Hennessy, J. Donald, Council Bluffs
Henningsen, Artemus B., Clinton
Henry, Clyde A., Farson (L.M.)
Henry, Hiram B., Des Moines
Henstorf, Harold R., Shenandoah
Herman, John C., Boone
Herny, Peter M., Prairie City
Herrick, Thomas G., Gilmore City
Herrick, Walter E., Ottumwa
Herrmann, Christian H., Jr., Amana
Hersey, Nelson L., Independence
Hess, John, Jr., Des Moines
Heuermann, Dorothy J., Coulter
Heusinkveld, Henry J., Clinton
Hickenlooper, Carl B., Winterset (A.M.)
Hickey, Robert C., Iowa City
Hickman, Charles S., Centerville
Hicks, Wayland K., Sioux City
Hildebrand, Howard H., Ames
Hill, Don E., Clinton
Hill, James W., Mount Ayr (L.M.)
Hill, Julia Ford, Santa Barbara, California (L.M.)
Hill, Lee Forrest, Des Moines
Hill, Richard W., Lake Mills
Hines, Ralph E., Des Moines
★Hintz, D. Charles, Vista, Calif.
Hirleman, Hal R., Cedar Rapids
Hirsch, Harry N., Sioux City
Hirst, Donald V., Council Bluffs
Hodges, Robert E., Iowa City
★Hoenig, Howard E., San Francisco, California
Hoeven, Edward B., Ottumwa
Hoffman, Paul M., Tipton (L.M.)
Hoffmann, Robert W., Des Moines
Hofmann, William P., Davenport
Hogenson, George B., Eagle Grove
Hollander, Werner M., Davenport
Hollis, Edward L., Marengo (L.M.)
Holloway, Ralph J., Charleston, West Virginia
Holtey, Joseph W., Ossian
Hombach, Walter P., Council Bluffs
Hommel, Placido R. V., Elkader
Honke, Edward M., Sioux City
Hooper, Lester E., Indianola
Hopkins, David H., Des Moines (A.M.)
Hornaday, William R., Des Moines
Hornberger, John R., Manning
Horst, Arthur W., Sioux City
Hosford, Horace F., Burlington
Hospodarsky, Leonard J., Des Moines
Hostetter, John I., Des Moines
Houghton, Earl J., Bettendorf
Houlahan, Jay E., Mason City
Houlihan, Francis W., Ackley
Houser, Cass T., Cedar Rapids (L.M.)
Housholder, Harold A., Winthrop (L.M.)
Howar, Bruce F., Webster City
Howard, Dwayne E., Sioux City
Howard, Lloyd G., Council Bluffs
Howe, Gerald W., Iowa City
Howell, David A., Dubuque
Howell, Elias B., Ottumwa
Hoyt, John L., Creston
Hruska, Glen J., Belmond
Huber, Robert A., Charter Oak
Hubiak, John, Odebolt
Hudek, Joseph W., Garnavillo (L.M.)
Huey, John R., Cedar Rapids
Huffman, William C., Iowa City
Hughes, Parker K., Des Moines
Hughes, Robert O., Ottumwa
Hughet, Keith R., Osage
Hull, Gene I., Des Moines
Hulse, Roy A., Burlington
Hunt, Van W., Mason City
Hunting, Ralph D., Cedar Rapids
Huntley, Charles C., Avoca
Hurevitz, Hyman M., Davenport
Huston, Daniel F., Burlington
Huston, John, Jr., Cedar Rapids
Huston, K. Garth, Des Moines
Huston, Marshall D., Cedar Falls
Huston, Paul E., Iowa City
Hyatt, Charles N., Corydon
Hyde, John R., Emmetsburg

Ihle, Charles W., Cleghorn (L.M.)
Ingham, Paul G., Mapleton
Ingle, Newell G., Cedar Rapids
Ingraham, David R., Sewal
Ireland, William W., Ottumwa
Irish, Thomas J., Forest City
Irving, Noble W., Des Moines
Isenberg, Bertice A., Lohrville (A.M.)
Isham, Robert B., Osage

Jack, Darwin B., Oelwein
Jackson, James M., Jefferson (L.M.)
Jackson, James S., Mount Pleasant
Jacobs, Carl A., Sioux City
Jacobs, Edward L., Conrad
Jacoby, James A., Burlington
Jacques, Lewis H., Lone Tree
Jaenicke, Kurt, Clinton (L.M.)
Jaggard, Robert S., Oelwein
James, Audra D., Des Moines (A.M.)
James, David W., Des Moines
James, Lora D., Fairfield (L.M.)
James, Peter E., Audubon (L.M.)
Janse, Phillip V., Algona (L.M.)
January, Lewis E., Iowa City
Jaquis, John R., Reinbeck
Jardine, George A., New Virginia (A.M.)
Jarvis, Harry D., Chariton (L.M.)
Jaskunas, Stanley R., Bloomfield
Jauch, Karl E., La Porte City
Jeffries, James H., Waterloo
Jeffries, Milo E., Marshalltown
Jeffries, Roy R., Waukon
Jenkins, George A., Albia (L.M.)
Jenkins, George D., Burlington
Jenkins, Hanley F., Des Moines
Jenkinson, Harry R., Iowa City
Jenks, Alonzo L., Jr., Des Moines
Jensen, Kenneth V., Clarinda
Jensen, LeRoy E., Audubon
Jerdee, Ingebrecht C., Clermont
Jerome, Peter, Davenport
Jirsa, Harold O., Cedar Rapids
Johann, Albert E., Des Moines (A.M.)
Johnson, Aaron Q., Sioux City
Johnson, Christine A., Iowa City
Johnson, Clarence A., Coon Rapids
Johnson, Francis N., Des Moines
Johnson, G. Raymond, Ottumwa
Johnson, Harvey A., Atlantic
Johnson, Merton A., Nevada
Johnson, Norman M., Clarinda
Johnson, Richard M., Denison
Johnson, Robert J., Iowa Falls
Johnson, Robert M., Des Moines
Johnson, Robert W., Iowa City
Johnson, Victor P., Des Moines
Johnston, Edward V., Waterloo
Johnston, C. Harlan, Des Moines
Johnston, Florence, Cedar Rapids
Johnston, George B., Estherville
Johnston, Harry L., Ames
Johnston, Helen, Des Moines
Johnston, James P., Des Moines
Johnston, Wayne A., Dubuque
Jones, Cecil C., Des Moines
Jones, Charles L., Gilmore City (L.M.)
Jones, Clare C., Spencer
Jones, G. William, Des Moines
Jones, Harold W., Sioux City
Jones, Harry J., Cedar Rapids (L.M.)
Jones, Maynard L., Colfax
Jongewaard, Albert J., Jefferson
Jongewaard, Jean, Jefferson
Jongewaard, Robert E., Scranton
Joranson, Robert E., Council Bluffs
Jordan, John W., Maquoketa
Jowett, John R., Clinton
Joyce, George T., Mason City
Joynt, Albert J., Waterloo
Joynt, Michael F., Marcus
Joynt, Robert J., Iowa City
Judiesch, Kenneth J., Iowa City
Juel, Einer M., Atlantic

Kaack, Harry F., Jr., Clinton
Kadesky, Melvin C., Iowa City
Kaelber, William W., Iowa City
Kahler, Hugo V., Reinbeck (L.M.)
Kane, Thomas E., Boone
Kanealy, John F., Cedar Rapids
Kapke, Franklin W., Mason City
Kaplan, David D., Sioux City
Kaplan, Robert M., Davenport
Kasiske, Walter B., Keokuk
Kassmeyer, John C., Dubuque
Kast, Donald H., Des Moines
Katzmann, Frederick S., Des Moines
Kayne, Bernard M., Highland Park, Illinois
Keane, Kenneth M., Sioux City
Keech, Roy K., Cedar Rapids (L.M.)
Keeney, George H., Mallard
Keettel, William C., Iowa City
Kehoe, Joseph L., Davenport
★Keil, Philip G., Maxwell AFB, Alabama
Keiser, Orris S., Muscatine
Keith, Charles W., Strawberry Point (L.M.)
Keith, John J., Marion
Kelberg, Melvin R., Sioux City
Kelley, Edmund J., Des Moines
Kelley, John H., Des Moines
Kelley, Newell R., Des Moines
Kelly, Anthony H., Sioux City
Kelly, Dennis H., Des Moines (A.M.)
Kelly, John F., Sioux City
★Kelly, John F., New York, New York
Kelly, William J., Dubuque
Kelsey, James E., Des Moines
Kemp, Robert R., Keokuk
Kenefick, John N., Algona
Kennedy, Elizabeth S., Oelwein (L.M.)
Kenney, Bernard E., Woodbine
Keohen, Gerald F., Dubuque
Kern, George A., Des Moines
Kern, Lester C., Waverly (L.M.)
Kerr, W. Hawley, Hamburg
Kershner, Frank O., Clinton
*Kersten, Ernest M., Fort Dodge
Kersten, Herbert H., Fort Dodge
Kersten, John R., Fort Dodge
Kersten, Paul M., Fort Dodge
Kerwick, Joseph M., New Hampton
Kestel, John L., Waterloo
Kettelkamp, Enoch G., Monona
Keyser, Earl L., Marshalltown
Keyser, Ralph E., Marshalltown (L.M.)
Kieck, Ernest G., Etowah, North Carolina
Kiesau, Milton F., Postville
Kiesling, Harry F., Lehigh
Kilgore, Ben F., Des Moines
Kimball, John E., West Liberty
Kimberly, Lester W., Davenport

King, Dean H., Spencer
King, Ross C., Clinton
Kingsbury, Charles L., Keokuk
Kingsbury, Kenneth R., Ottumwa
Kirch, Walter A., Des Moines
Kirkegaard, Dale D., Iowa City
Kirkendall, Walter M., Iowa City
Kirkham, Lindsay J., Mason City
Klein, John L., Jr., Muscatine
Klein, Robert F., Muscatine
Kleinberg, Henry E., Des Moines
Kline, Samuel, Sioux City
Klocksiem, Harold L., Des Moines
Klocksiem, Roy G., Rockwell City
Klok, George J., Council Bluffs
Kluever, Herman C., Fort Dodge
Knight, Benjamin L., Cedar Rapids
Knight, Edson C., Marshalltown
Knight, Russell A., Rockford
Knipfer, Robert L., Jesup
Knosp, Alton, Paton
Knosp, Norman C., Belle Plaine
Knott, Peirce D., Sioux City
Knouf, Clare F., Lake City
Knowles, Fred L., Fort Dodge
Knox, James M., Cedar Rapids (L.M.)
Knox, Robert M., Des Moines
Knutsen, Arne, Sioux City
Koch, John S., Madison, Wisconsin
Koelling, Lloyd H., Newton
Kohrs, Edward, Davenport
Koons, Claude H., Des Moines
Koontz, Lyle W., Vinton
Kopecky, Edward F., Cedar Rapids
Kopsa, Walter J., Tipton
★Koptik, George, Jr., Hines, Illinois
Korfmacher, Edwin S., Grinnell
Kornder, Louis H., Davenport
Korns, Horace M., Iowa City
Kos, Clair M., Iowa City
Koser, Donald C., Cherokee
Krettek, John E., Council Bluffs
Krigsten, Joe M., Sioux City
Krigsten, William M., Sioux City
Kroack, Kalman J., Buffalo Center
Kruckenberg, William G., Cedar Rapids
Krueger, Norman L., Milwaukee, Wisconsin
Kruml, Joseph G., Council Bluffs
Kruse, Otto E., Tipton
Kruse, Rolf F., Waterloo
Kruse, Rufus H., Marshalltown
Kuehn, Willard G., Clarinda
Kuhl, Augustus B., Davenport (L.M.)
Kuhl, Augustus B., Jr., Davenport
Kuhl, Robert H., Creston
Kuhn, Mark A. R., Waterloo
Kuker, Leo H., Carroll
*Kulp, Raymond R., Davenport (L.M.)
Kurtz, Cecilia M., Cedar Rapids
Kyer, Donald L., Dubuque
Kyle, William S., Washington (L.M.)

Lagen, Mansfield S., Dubuque
Lagoni, Ralph P., Eldridge
*Lamb, Frederick H., Davenport
Lamb, Harry H., Davenport
Lambrecht, Paul B., Des Moines
Lande, Jacob N., Sioux City
Langworthy, Henry G., Dubuque (L.M.)
Lannon, James W., Mason City
La Porte, Paul A., Wellsburg
Larimer, Robert C., Sioux City
Larimer, Robert N., Sioux City
Larsen, Elmer A., Centerville
Larsen, Frank S., Fort Dodge
Larsen, Harold T., Fort Dodge
Larsen, Lawrence V., Harlan
Larson, Andrew G., Dickens (L.M.)
Larson, Carroll B., Iowa City
Larson, Erling, Davenport
Larson, Gerald E., Elk Horn
Larson, Lester E., Decorah
Larson, Marvin O., Hawarden
La Rue, Jack L., Anita
Latchem, Charles W., Des Moines
Latimer, Milton J., Burlington
Laube, Paul J., Dubuque
Laughlin, Ralph M., Cedar Rapids
Lauvsted, Edward E., Osceola
Lavender, John G., George
Lawler, Matthew P., Jr., Des Moines
Lawlor, Jeremiah F., Cherokee
Lawrence, Joseph W., Arcadia, Florida
Layton, Jack M., Iowa City
Leander, Richard B., Council Bluffs
Lederman, Joseph, Oskaloosa
Lee, Robert W., Fort Dodge
Lee, Wayne R., Burlington
Leehey, Paul J., Independence
Leffert, Frank B., Centerville
Lehman, Emery W., Bluffton, Indiana (L.M.)
Lehr, Sylvan M., Cedar Rapids
Leighton, Lewis L., Fort Dodge
Leinbach, Samuel P., Belmond
Leinfelder, Placidus J., Iowa City
Leiter, Herbert C., Sioux City
Le Jeune, Francis E., Iowa City
Lekwa, Alfred H., Story City
Lemke, Betty A. T., Des Moines
Lemon, Kenneth M., Oskaloosa
Lenzmeier, Albert J., Davenport
*Leonard, Frederick S., Dubuque (L.M.)
Leonard, Thurman K., Madrid
Le Poidevin, Jean S., Waterloo
Lesiak, John J., Titonka
Levy, James W., Sioux City
Lewis, Faye C., Webster City
Lewis, William B., Webster City
Lierle, Dean M., Iowa City
Lierman, Clifford E., Lake View
Liken, John A., Creston
Limbert, Edwin M., Council Bluffs
Limburg, John I., Jr., Jefferson
Lindell, Sherman E., Le Mars
Linder, Enfred E., Ogden
Lindholm, Claire V., Armstrong
Lindholm, Hugo A., Armstrong
Lindley, Ellsworth L., Cedar Rapids
Linge, Scott, Fayette
Linthacum, Robert W., Dysart
Liska, Edward J., Ute
Lister, Eugene E., Dallas Center
Lister, Kenneth E., Ottumwa
Lloyd, John M., Washington
Locher, Robert C., Cedar Rapids
Lockhart, Harold, Cedar Rapids
Loeck, John F., Independence
Loes, Anthony M., Dubuque
Lohman, Frederick H., Waterloo
Lohmann, Carl J., Burlington
Lohr, Phillips E., Churdan
Long, Draper L., Mason City
Longworth, Wallace H., Boone
Loomis, Frederic G., Waterloo
Lorfeld, Gerhard W., Davenport
Losasso, David A., Davenport
Losh, Clifford W., Des Moines (L.M.)
Losh, Clifford W., Jr., Des Moines
Lovejoy, E. Parish, Des Moines
Loving, Luther W., Estherville
Lowry, Charles F., Council Bluffs
Loxterkamp, Edward O., Rolfe
Ludwig, Clarence J., Waterloo
Lueck, Arthur G., Des Moines
Luehrsmann, Bernard C., Dyersville
Luke, Edward, Coin (L.M.)
Lulu, Donald J., Des Moines
*Lundvick, Arthur W., Iowa City (L.M.)
Luse, Ralph F., Clinton
Lutton, John D., Sioux City
★Lyman, Frank L., Jr., Beaufort, South Carolina
Lynn, Clarence E., Dubuque (A.M.)
Lyons, Mary Louise, Des Moines

MacGregor, John K., Mason City
MacLeod, Hugh G., Greene
MacQueen, John C., Iowa City
McAllister, William G., Manly
McBride, James T., Des Moines (L.M.)
McBride, Robert H., Sioux City
McCaffrey, Eugene H., Des Moines
McCall, John H., Allerton
McCarthy, Frank D., Sioux City
McClean, Earl D., Des Moines
McClellan, John W., Onawa
McClure, Gail A., Ames
McClurg, Frank H., Fairfield
McConkie, Edwin B., Cedar Rapids
McConkie, Willis L., Carroll
McConnell, Robert W., Davenport
McCool, Robert F., Clarion
McCormack, William C., Ames
McCoy, Harold J., Des Moines
★McCoy, John T., Philadelphia, Pennsylvania
McCrary, W. Ashton, Lake City
McCreedy, Murry L., Washington
McCreight, George C., Carmel Valley, California (A.M.)
McCuistion, Harry M., Sioux City
McDonald, Don J., Cedar Rapids
McDowall, Gilbert T., Gladbrook (L.M.)
McFadden, F. Ross, Davenport
McFarland, Guy E., Ames
McFarland, Guy E., Jr., Ames
McFarland, Julian E., Ames
McFarlane, John A., Sioux City
McGahey, William B., Webster City
McGarvey, Cornelius J., Des Moines
McGeehon, Robert C., Indianola
McGilvra, Arthur L., Sioux Center
McGinnis, George C., Fort Madison
McGrane, Merle J., New Hampton
McGuire, Kenneth L., Keota
McGuire, Roy A., Fairfield
McHugh, Charles P., Sioux City
McIllece, Raymond C., Fort Madison
McIntosh, Philip D., Ottumwa
McIntyre, Caryl C., Waterloo
McKay, Richard V., Dubuque
McKean, Frank F., Allison
McKitterick, John C., Burlington
*McLaughlin, Charles W., Washington (L.M.)
McLaughlin, Philip A., Iowa City
McMahon, Arthur E., Jr., Mason City
McMahon, Thomas, Garner (L.M.)
McMeans, Thomas W., Davenport
McMillan, George J., Fort Madison
McMillan, James T., III, Des Moines
McMurray, Edward A., Newton
McMurray, Harry N., Burlington
McNamara, Robert J., Dubuque
McNamee, Jesse H., Des Moines
McQuiston, J. Stuart, Cedar Rapids
McTaggart, William B., Fort Dodge
McVay, Melvin J., Lake City
Mackin, M. Charles, Des Moines (L.M.)
Macrae, James G., Coldwater, Michigan (L.M.)
Macy, William W., Iowa City
Magaret, Ernest C., Glenwood
Magee, Emery E., Waterloo
Maher, Louis L., Iowa City
Mahoney, James D., Council Bluffs
Mailliard, Robert E., Storm Lake
Maixner, William D., Ottumwa
Maland, Donald O., Cresco
Malek, John C., Waterloo
Maloy, Wayland H., Shenandoah
Manderscheid, Robert A., Boone
Mangan, J. Thomas, Forest City
Manning, Ephraim L., Davenport
Manoles, Ellias N., Des Moines
Manthey, Charles E., Waterloo
Manthey, Richard G., Waterloo
Maplethorpe, Charles W., Toledo
Maplethorpe, Charles W., Jr., Toledo
Marble, Edwin J., Marshalltown
Marble, Pearl L., Liscomb (L.M.)
Marble, Willard P., Marshalltown
Margules, Maurice P., Council Bluffs
Margulies, Harold, Des Moines
Marinos, Harry G., Mason City
Maris, Cornelius, Sanborn
Mark, Edward M., Clarksville
Mark, Milton S., Des Moines
Marker, John I., Davenport
Markham, William S., Harlan
Marme, George W., De Witt
Marquis, Fred M., Waterloo
Marquis, George S., Des Moines
Marriott, Charles M., Sioux City
Marsh, Frederick E., Council Bluffs
Marsh, Frederick E., Jr., Council Bluffs
Marshall, Jean A., Iowa City
Martin, James W., Hostein
Martin, Josef R., Carroll
Martin, Lee R., Council Bluffs
Martin, Ronald F., Sioux City
Martin, Sidney D., Carroll (L.M.)
Martini, Henry F., Council Bluffs
Mason, Edward E., Iowa City
Mason, Robert P., Des Moines
Mason, Stella M., Mason City (L.M.)
Mast, Truman M., Washington
Mater, Dwight A., Knoxville
Matheson, John H., Des Moines
Mathiasen, Emmett B., Council Bluffs
Mathiasen, Henning W., Council Bluffs
Mathiasen, John W., Council Bluffs
Matthey, Carl H., Davenport
Matthey, Walter A., Davenport
Mattice, Lloyd H., Sheldon
Mattice, Roger J., Sioux Rapids
Mauritz, Emory L., Des Moines
Maxwell, Charles T., Sioux City
Maxwell, John R., Iowa City
May, Charles D., Iowa City
May, George A., Forest Grove, Oregon (A.M.)
Mazur, Theodore T., Burlington
Meffert, Clyde B., Cedar Rapids
Megorden, William H., Mount Pleasant
Mehrl, William J., Manchester
Melgaard, Robert T., Dubuque
Mellen, Robert G., Clinton
Merillat, Herbert C., Des Moines

Merkel, Arthur E., Des Moines (L.M.)
Merkel, Byron M., Des Moines
Merritt, Arthur M., Des Moines (L.M.)
Merritt, F. Benjamin, Dubuque
Merritt, James O., Des Moines
Merselis, Harold K., Audubon
Mershon, Clinton E., Adel (L.M.)
Meservey, Maynard A., Jr., Des Moines
Meyer, Albert J., Iowa City
Meyer, Alfred K., Clinton
★Meyer, Paul G., New York, New York
Meyer, Robert J., Wellsburg
Meyers, Frank W., Dubuque (L.M.)
Meyers, Paul T., Bloomfield
Meyers, Robert P., Ottumwa
Michaelson, Beryl F., Dakota City
Michaelson, Don, Sac City
Michelfelder, Theodore J., Fort Dodge
Michener, Robert B., Iowa City
Middleton, William H., Cedar Rapids
Mikelson, Clarence J., Waterloo
Miller, Chester I., Iowa City
Miller, Donald F., Williamsburg
Miller, Enos D., Wellman
Miller, Garfield, Calmar
Miller, Howard L., Cedar Rapids
Miller, Jay R., Wellman
Miller, Keith E., Agency
Miller, Lawrence A., North English
Miller, Lawrence A., II, North English
Miller, Richard L., Waterloo
Miller, Robert C., Waterloo
Miller, Temple M., Muscatine
Miller, Wilbur R., Arcadia, California
Miltner, Leo J., Davenport
Minassian, Harootune A., Des Moines (L.M.)
Minassian, Thaddeus A., Des Moines (L.M.)
Miner, James B., Charles City
Mirick, Donald F., Clinton
Mitchell, Claire H., Cincinnati (L.M.)
Mitchell, Duane E., Mount Ayr
Mitchell, Richard C., Waterloo
Moberly, John W., Dubuque
Mochal, John L., Independence
Moe, Ralph H., Griswold
Moeller, Jay A., Iowa City
Moen, Stanley T., Cedar Rapids
Moermond, James O., Buffalo Center
Moershel, Henry G., Homestead
Moershel, William J., Cedar Rapids
Moessner, Harold, Amana
Moles, Marvin R., Newton
Monnig, Philip J., Sioux City
★Montgomery, Albert E., Phoenixville, Pennsylvania
Montgomery, George E., Ames
Montgomery, Guy E., Washington
Montz, Fred, Lowden
Moon, Barclay J., Cedar Rapids
Moon, Merritt D., Waterloo
Mooney, James C., Des Moines
Moore, Carlyle C., Emmetsburg
Moore, Edson E., Fort Dodge
Moore, Jesse C., Eldon (L.M.)
Moore, Pauline V., Iowa City
Moore, Richard M., Des Moines
Moorehead, Harold B., Underwood
Mordaunt, Richard H., Nevada
Morgan, Dale D., Marion
Morgan, Francis W., Ottumwa
Morgan, Harold W., Mason City
Morgan, Jack N., Fairfield
Morgan, Paul W., Mason City
Morgan, Rex L., Sioux City
Morganthaler, Otis P., Templeton (L.M.)
Moriarty, Darwin L., Council Bluffs
Morrison, John R., Glidden
Morrison, John W., Alta (L.M.)
Morrison, Robert E., Waterloo
Morrison, Roland B., Carroll
Morrissey, George E., Davenport
Morrissey, William J., Des Moines
Morse, Charles H., Fort Dodge (L.M.)
Mosher, Martin L., Jr., Iowa City
Mott, William H., Farmington (L.M.)
Motto, Edwin A., Davenport
Mountain, George E., Des Moines
Moyers, Jack, Iowa City
Mueller, Albert C., Monona
Mugan, Robert C., Sioux City
Mulford, William A., Creston
Mulry, William C., Carroll
Mulsow, Frederick W., Cedar Rapids
Munger, Elbert E., Spencer
Munns, Richard E., Hampton
Murchison, Kenneth, Sidney (L.M.)
Murphey, Arlo L., Fredericksburg
Murphy, Cornelius B., Alton
Murphy, George C., Waterloo
Murphy, James H., Des Moines
Murphy, Robert E., Fort Madison
Murray, Frederick G., Cedar Rapids (L.M.)
Murray, Jonathan H., Burlington
Murtaugh, James E., New Hampton
Myerly, William H., Des Moines
Myers, Kermit W., Sheldon
Myers, Robert W., Monticello

Nakashima, Victor K., Dubuque
Nash, Edwin A., Des Moines (L.M.)
Nash, Warren, Waterloo
Nauman, Ernest C., Waterloo
Neal, Emma J., Cedar Rapids (L.M.)
Nederhiser, Morgan I., Cascade
Needles, Roscoe M., Atlantic
★Neff, Herbert, La Plata, Puerto Rico
Neglia, Fortunato J., Maxwell
Neligh, Gordon L., Jr., Council Bluffs
Nelken, Leonard, Clinton
Nelson, Arnold L., Des Moines
Nelson, F. Lawrence, Ottumwa
Nelson, Leo C., Jefferson
Nelson, Norman B., Iowa City
Nelson, Paul O., Emmetsburg
Nelson, Robert J., Clinton
Nemec, Joseph J., Cedar Rapids
Nemmers, Gerald J., Washington
Netolicky, Robert Y., Cedar Rapids
Neufeld, Robert J., Davenport
Neuzil, William J., Cedar Rapids
Newland, Don H., Belle Plaine
Newland, Donald O., Des Moines
Niblock, George F., Homewood, Illinois (L.M.)
Nicholson, Clyde G., Des Moines
Nicoll, Charles A., Panora
Nicoll, David T., Mitchellville (L.M.)
Nielsen, Arnold T., Ankeny
Nielsen, Glen E., Des Moines
Nielsen, Rudolph F., Cedar Falls
Nielson, Arthur L., Council Bluffs
Niemann, Theodore V., Brooklyn
Nierling, Paul A., Cresco
Nitzke, Everett A., Des Moines
Noble, Nelle S., Des Moines (L.M.)
Noble, Rusl P., Alta
Noe, Carl A., Cedar Rapids
Noe, Charles F., Amana (L.M.)
Nolan, John C., Corning
Nomland, Ruben, Iowa City
Noonan, James J., Marshalltown
Nord, Donald H., Cambridge
Nordin, Charles A., Des Moines
Nordschow, Carleton D., Iowa City
Norris, Lewis D., Newton
North, Frank R., Morning Sun (L.M.)
Northup, Maurice, Humboldt
Noun, Louis J., Des Moines
Noun, Maurice H., Des Moines
Nyquist, David M., Eldora

Ober, Frank G., Burlington
O'Brien, Lyal J., Fort Dodge
O'Brien, Stephen A., Mason City
O'Brien, Stephen A., Jr., Dubuque
O'Connor, Edwin C., New Hampton
O'Donnell, Joseph E., Clinton
O'Donoghue, Arch F., Sioux City
O'Donoghue, James H., Atlantic (L.M.)
Oelrich, Carl D., Sioux Center
Oggel, Herman D., Maurice (L.M.)
O'Keefe, Paul T., Waterloo
O'Leary, Francis B., Sibley
Olin, Elvin E., Dubuque
Olsen, Martin I., Des Moines (L.M.)
Olsen, Max E., Minden
Olsen, Ranald E., Milton
Olson, Evelyn M., Winterset
Olson, Stewart O., Des Moines
O'Neal, Harold E., Tipton
Onnen, Dale R., Newton
Orcutt, Paul E., Marion
Orelup, Don N., Albia
Ortmeyer, Donald W., Waterloo
Orton, Lawrence C., Mason City
Osborn, C. Robert, Dexter
Osincup, Paul W., Sioux City
Osten, Burdette H., Northwood
O'Toole, Laurence C., LeMars
Ottilie, Donald J., Oelwein
Otto, Paul C., Fort Dodge
Owca, Anthony S., Centerville
Owen, Richard V., Washington
Owen, William E., St. Ansgar

Packard, Douglas K., Dubuque
Page, Wesley M., Montezuma
Pahlas, Henry M., Dubuque
Paige, Ralph T., La Porte City
Painter, J. Carl, Dubuque
Palcheff, Christ L., University City, Missouri
Palmer, Carson W., Guttenberg (A.M.)
Palmer, Gerald K., Iowa City
Palmer, Howard C., West Liberty
Palumbo, Louis T., Des Moines
Paragas, Modesto R., Creston
Parish, John R., Grinnell
Parke, John, Cedar Rapids
Parker, Loran F., Iowa Falls
Parker, Robert L., Des Moines (L.M.)
Parks, Claude O., Iowa City
Parks, John L., Muscatine
Parson, Victor G., Des Moines
Parsons, John C., Des Moines
Paschal, George A., Webster City
Pascoe, Paul L., Carroll
Patterson, John N., Burlington (L.M.)
Patterson, Roy A., Webster City
Paul, John D., Anamosa
Paul, Richard E., Des Moines
Paul, William D., Iowa City
Paulsen, Donald A., Victor
Paulsen, Herbert B., Harris
Paulson, Jerome F., Mason City
Paulus, Edward W., Iowa City
Paulus, James W., Dubuque
Pearlman, Leo R., Des Moines
Pearson, George J., Burlington
Peart, John C., Davenport
Peasley, Harold R., Des Moines
Peck, Lowell J., Iowa City
Pedersen, Arthur M., Council Bluffs
Pedersen, Paul D., Council Bluffs
Peggs, Harold J., Creston
Peisen, Conan J., Des Moines
Pelz, Werner P., Charles City
Penly, Don H., Cedar Falls
Pennington, Orville J., Dexter (L.M.)
Perel, Ada R., Des Moines
Perkins, Franklin C., Hedrick
Perkins, Rollin M., Davenport
Perley, Arthur E., Waterloo
Perrin, William D., Sumner
Pester, George H., Council Bluffs
Peters, Earl E., Muscatine
Petersen, Donal C., Burlington
Petersen, Emil C., Atlantic
Petersen, Millard T., Atlantic
Petersen, Robert E., Dubuque
Petersen, Vernon W., Clinton
Peterson, Elroy R., Ames
Peterson, Frank R., Cedar Rapids
Peterson, John C., Jr., Hartley
Peterson, Ray W., Clear Lake
Peterson, Richard E., Iowa City
Peterson, Richard J., Panora
Pfaff, Robert A., Dubuque
Pfeiffer, Donald W., McGregor
Pfeiffer, Harry E., Riviera Beach, Florida (L.M.)
Pfohl, Anthony C., Dubuque
Phelan, Mary Patricia, Altoona
Phelps, C. Ray, Ottumwa
Phelps, Gardner D., Waterloo
Phelps, Richard E. H., New Sharon
Pheteplace, Willard S., Davenport
Phillips, Albin B., Clear Lake (L.M.)
Phillips, Allan B., Des Moines
Phillips, Clarence P., Muscatine
Phillips, Walter B., Montezuma
Piburn, Marvin F., South Rhodesia, Africa
Piekenbrock, Frank J., Dubuque
Piekenbrock, Thomas C., Dubuque
Piercy, Kenneth C., Ames
Pierson, Lawrence E., Sioux City
Ping, E. R. Chang, Independence
Pitcher, Arlo L., Belmond
Pitluck, Harry L., Laurens
Pittinger, Charles B., Iowa City
Plager, Vernon H., Waterloo
Plankers, Arthur G., Dubuque
Poepsel, Frank L., West Point
Ponseti, Ignacio V., Iowa City
Poore, Samuel D., Villisca
Porter, Lawrence W., Indianola
Porter, Philip M., New Hampton
Porter, Richard C., Des Moines
Porter, Robert J., Des Moines
Porter, S. Dale, Grinnell
Posner, Edward R., Jr., Des Moines
Posner, Edward R., Sr., Des Moines (L.M.)
Powell, Lester D., Des Moines
Powell, Robert A., Shenandoah
Powell, Robert M., Mason City
Powers, George H., Shenandoah
Powers, Henry R., Emmetsburg
Powers, Ivan R., Waterloo

Powers, John L., Estherville
Preacher, Charles B., Davenport
Preece, Wade O., Waterloo
Prescott, Kenneth H., Storm Lake
Presnell, William H., Charlotte
Prewitt, Leland H., Ottumwa
Price, Alfred S., Des Moines (L.M.)
Price, Richard B., Iowa City
Priestley, Joseph B., Des Moines
Proctor, Rothwell D., Cedar Rapids
Prouty, James V., Cedar Rapids
Province, William, Jr., Dubuque
Ptacek, Joseph L., Webster City
Pugh, Philip F. H., Sioux City
Pumphrey, Loira C., Keokuk
Puntenney, Andrew W., Boone
Purdy, William O., Des Moines

Radcliffe, Christian E., Iowa City
Radicia, Lucy M., Council Bluffs
Rahn, Gordon E., Mount Vernon
Rainy, Curtis W., Elma
Ralston, Furman P., Knoxville
Rambo, David T., Ottumwa (L.M.)
Ramsdell, Stuart T., Clarinda
Randall, John H., Iowa City
Randall, Ross G., Waterloo
Randall, William L., Hampton
Randolph, Aaron P., Anamosa
Rankin, Isom A., Iowa City
Rankin, John R., Keokuk
Rankin, William, Keokuk (L.M.)
Ransom, Harry E., Des Moines
Rapoport, Anita E., Davenport
Rater, David L., Ottumwa
Rathe, Herbert W., Waverly
Rausch, Gerald R., Sioux City
Ravreby, Mark D., Des Moines
Raw, Elmer J., Pierson (L.M.)
Read, Charles H., Iowa City
Reading, Donald S., Iowa City
Readinger, Harry M., New London
Redfield, Earl L., Des Moines
Redmond, James J., Cedar Rapids
Redmond, Thomas M., Monticello (L.M.)
Reed, Paul A., Iowa City (L.M.)
Reed, Robert J., Des Moines
Reeder, James E., Sioux City
Reeder, James E., Jr., Sioux City
Reedholm, Edwin A., Grundy Center
Reimers, Robert S., Fort Madison
Rembolt, Raymond R., Iowa City
Rence, William G., Mason City
Reuber, Roy N., Mason City
Reuling, Frank H., Waterloo
Reynolds, Albert C., Des Moines (L.M.)
Rhodes, John M., Pocahontas
Rice, Floyd W., Des Moines (L.M.)
Richards, Richard D., Iowa City
Richardson, Francis H., Council Bluffs
Richey, Granville L., Centerville
Richmond, Arthur C., Fort Madison
Richmond, Frank R., Fort Madison
Richmond, Frank R., Jr., Fort Madison
Richmond, Paul C., New Hampton
Richter, Harold J., Albia
Ridenour, Edward J., Waterloo
Ridenour, Joseph E., Waterloo (L.M.)
Rider, Harmon E., Sioux City
Riegelman, Ralph H., Des Moines
Rieniets, John H., Cedar Rapids
Riggert, Leonard O., Clinton
Rimel, George W., Bedford
Rindskopf, Wallace, Des Moines
Rinker, George E., Oto (L.M.)
Ritter, Eugene F., Centerville
Rizzo, Frank M., Sibley
Robb, James B., College Park, Maryland (L.M.)
Robb, William J., Cedar Rapids
Roberts, C. Ronald, Dysart
*Roberts, F. LeRoy, Corona, California (L.M.)
Roberts, Francis M., Knoxville (L.M.)
Roberts, Justus B., Ottumwa
Robertson, Treadwell A., West Liberty
Robinson, Ray G., State Center
Robinson, Robert E., Waverly (L.M.)
Robinson, Van C., Des Moines
Rock, J. Gordon, Davenport
Rock, John E., Davenport
Rockwell, Maryelda, Clinton
Rodabaugh, Kenneth D., Tabor
Rodawig, Don F., Spirit Lake
Roddy, Harold J., Mason City
Rodemeyer, Frederick H., Sheffield (L.M.)
Rogers, Claude B., Earlville (L.M.)
Rohlf, Edward L., Jr., Waterloo
Rohrbacher, William M., Iowa City
Rohwer, Roland T., Sioux City
Rolfs, Floyd O., Parkersburg
Rolfs, Fred A., Aplington
Romero, José M., Des Moines
Rominger, Clark R., Waukon
Rominger, Clark W., Waukon
Rooney, Joseph M., Algona
Rose, Alvin A., Story City
Rose, Joseph E., Grundy Center
Rosebrook, Lee E., Ames
Rosendorff, Charlotte, Davenport
Ross, Arthur J., Jr., Perry
Rost, Glenn S., Lake City
Rotkow, Maurice J., Des Moines
Roudybush, William B., Muscatine
Roules, J. Frederic, Mediapolis
Rowat, Harry L., Des Moines (L.M.)
Rowley, Robert D., Iowa City
Rowley, William G., Sioux City (L.M.)
Rowney, George W., Sioux City
Royal, Lester A., West Liberty (L.M.)
Royal, Malcolm A., Des Moines (L.M.)
Rudersdorf, Howard E., Sioux City
Ruliffson, Howard D., Storm Lake
Ruml, Wentzle, Cedar Rapids (L.M.)
Rusk, Ross P., Dubuque
Russell, Elwood P., Burlington
Russell, John, Santa Barbara, California (L.M.)
Russell, Ralph E., Waterloo
Rust, Emery A., Webb (L.M.)
Ruth, Verl A., Des Moines
Ryan, Allen J., Harlan
Ryan, Charles M., Sioux City
Ryan, Cyril J., Clinton (A.M.)
Ryan, James W., Jr., Waverly
Ryan, Martin J., Sioux City
Ryan, Robert A., Fairfield

Saar, Jesse L., Donnellson
Saar, Jesse L., Jr., Burlington
Saar, John W., Keokuk
Safley, Max W., Forest City
Sahl, Jens, Jr., Iowa City
Sahs, Adolph L., Iowa City
St. Onge, Joseph A., Sioux City
Samberg, Harry H., Des Moines
Sampson, Carl E., Creston
Sampson, Frank E., Creston (L.M.)
Sams, Joseph H., Clarion (L.M.)
Sanders, George E., Miami, Florida (L.M.)
Sanders, Matthew G., Fort Dodge
Sanders, William E., Tucson, Arizona (L.M.)
Sands, Sidney L., Des Moines
Sands, W. Wayne, Des Moines
Sarff, Floyd G., Logan
Sartor, Guido J., Mason City
Sartor, Pierre, Titonka (L.M.)
Satrang, Geraldine, Sioux City
Sattler, Dwight G., Kalona
Sauer, Harold E., Marshalltown
Saul, F. William, Mason City
Sautter, Robert A., Mount Vernon
Sawyer, Grace M., Woodward
Scales, E. Thomas, Des Moines
Scanlan, George C., DeWitt
Scanlon, George H., Iowa City
Schacht, Norman A., Fort Dodge
Schaefer, Paul H., Cedar Rapids (L.M.)
Schaeferle, Lawrence G., Gladbrook
Schaeferle, Martin J., Eagle Grove
Schafer, Leander H., DeWitt
Schanche, Arthur N., Ames
Scharle, Theodore, Dubuque
Scheffel, Melvin L., Malvern
Scheibe, John R., Bloomfield
Schiff, Joseph, Spokane, Washington
Schill, Austin E., Des Moines
Schissel, Donald, Des Moines
Schlaser, Verne L., Des Moines
Schlichtemeier, Ellis O., Spencer
Schmitt, Donald D., Kimballton
Schnug, George E., Dows
Schoonover, Richard, Bloomfield
Schrier, Harold L., Fort Madison
Schrock, Christian E., Iowa City
Schroeder, Adrian J., Marshalltown
Schroeder, Frank N., Ryan
Schroeder, Leslie V., Walcott
Schropp, Rutledge C., Des Moines
Schrup, Joseph T., Dubuque (L.M.)
Schueller, Charles J., Dubuque
Schultz, Ivan T., Humboldt
Schultz, Nelle E. T., Humboldt
Schupp, Joseph G., Jr., Des Moines
Schutter, John M., Algona
Schwartz, Charles, Cedar Rapids
Schwartz, John W., Sioux City
Sciortino, Aileen Mathiasen, Council Bluffs
Sciscent, Verdi I., Waterloo
Scott, Phillip A., Spirit Lake
Scott, Sophie Hinze, Des Moines (L.M.)
Scoville, Victor T., Sioux City
Seaman, Charles L., Cherokee
Sear, John, Alden
Sebek, Roy O., Fort Dodge
Sedlacek, Leo B., Cedar Rapids
Sedlacek, Richard L., Cedar Rapids
Seebohm, Paul M., Iowa City
Seely, Harmon D., Cherokee
Seibert, Cecil W., Waterloo
Seidler, William A., Jr., Jamaica
Sellards, Joseph W., Clarinda (L.M.)
Sells, Benjamin B., Independence (L.M.)
*Selman, Ralph J., Ottumwa (A.M.)
Selo, Rudolph A., Council Bluffs
Senska, Frank R., Iowa City (A.M.)
Senty, Elmer G., Davenport
Severson, George J., Slater
Severson, Wayne L., Slater
Shafer, Arthur W., Davenport
Shane, Robert S., Pilot Mound
Shank, Raymond A., Cedar Rapids
*Shannon, Edwin R., Waterloo (L.M.)
Shapiro, Seymour W., Des Moines
Sharpe, Donald C., Dubuque
Shaw, David F., Britt
Shaw, Robert E., Waverly
Shea, Thomas E., Storm Lake
Sheeler, Ivan H., Des Moines
Sheets, Raymond F., Iowa City
Shelton, Charles D., Bloomfield (L.M.)
Shepherd, Loyd K., Des Moines
Sherman, Richard C., Los Angeles, California (L.M.)
Sherman, Robert B., Ackley
Shiffler, H. Kirby, Des Moines
Shinkle, William C., Des Moines
Shohet, Isaac H., Bode
Shope, Charles D., Greenfield
Shorey, Joseph R., Davenport
Shulman, Herbert, Waterloo
Shultz, William T., Des Moines
Shurts, John J., Eldora
Sibley, John A., Ames
Sibley, Edward H., Sioux City
Simpson, Roger A., Iowa City
Simmons, Ralph R., Des Moines (A.M.)
Singer, John R., Newton
Singer, Siegmund F., Ottumwa
Sinn, Irvin J., Williamsburg
Sinning, Augustus, Iowa City (L.M.)
Sinning, John E., Marshalltown
Skallerup, Glenn M., Red Oak
Skelley, Paul B., Jr., Dubuque
Skinner, Homer L., Des Moines
Skultety, F. Miles, Iowa City
Skultety, James A., Des Moines
Sloan, Fred R., Waterloo
Sloan, Fredric J., Cedar Rapids
Sloterdyk, Yme, Knoxville
Smazal, Stanley F., Davenport
Smead, Howard H., Des Moines
Smead, Leslie L., Newton (L.M.)
Smiley, George W., Ottumwa
Smiley, Ralph E., Mason City
Smith, Andrew C., Waterloo
Smith, Andrew D., Primghar
Smith, Anthony P., Hampton
Smith, Arthur F., Manning
Smith, Cecil R., Wyoming
Smith, Clyde J., Ringsted
Smith, Elmer M., Eagle Grove
Smith, Eugene, Waterloo
Smith, Herman J., Des Moines
Smith, Howard W., Woodward
Smith, J. Lawrence, Iowa Falls
Smith, J. Ned, Iowa City
Smith, John E., Clarence (L.M.)
Smith, John Maclean, Iowa City
Smith, Lawrence D., Des Moines
Smith, Richard C., Cedar Rapids
Smith, Richard W., Clarion
Smith, Robert A., Albia
Smith, Robert J., Stacyville
Smith, Robert T., Granger
Smith, Rodger B., Mason City
Smith, S. Rodmond, Red Oak
Smith, Sidney A., Oskaloosa
Smrha, James A., Cedar Rapids
Smythe, Arnold M., Des Moines
Snyder, Gregg M., Ottumwa
Snyder, Raleigh R., Des Moines
Sohm, Herbert A., Des Moines
Sokol, Charles R., State Center
Sones, Clement A., Des Moines
Soper, Robert T., Iowa City

Sorensen, Elmer M., Red Oak
Sorenson, Aral C., Davenport
Sorenson, Kermit R., Sabula
Southwick, William W., Marshalltown
Spain, Robert T., Conrad (L.M.)
Sparks, Francis R., Waverly (L.M.)
Spear, William, Oakdale
Spearing, Joseph H., Harlan
Speidel, Glenn P., Washington, D. C.
Spellman, George G., Sioux City
Spellman, Martin T., Cedar Rapids
Spencer, John H., Muscatine
Sperow, Wendell B., Nevada
Sperry, Frederick S., Clarinda
Spevak, Jack J., Detroit, Michigan
Spielhagen, Guenther F., Iowa City
Spilman, Harold A., Ottumwa
Spohnheimer, L. Nelson, Iowa City
Springer, Floyd A., Des Moines
Sproul, William M., Des Moines
Stalford, John H., Los Angeles, California (L.M.)
Stamler, Frederic W., Iowa City
Standefer, Joe M., Des Moines
Standeven, James W., Iowa City
Stark, Callistus H., Cedar Rapids
Stark, Frederick M., Sioux City
Starr, Charles F., Mason City (L.M.)
Starry, Allen C., Sioux City (A.M.)
Statton, Roy F., Iowa City
Stauch, Martin O., Moorhead
Stauch, Omar A., Sioux City
Staudt, Alfred J., Waterloo
Steenrod, Emerson J., Iowa Falls
Steffens, Lincoln F., Dubuque
Steffey, Fred L., Chicago, Illinois
Stegmaier, Otto C., Davenport
Stegman, Jacob J., Marshalltown
Steindler, Arthur, Iowa City (L.M.)
Stephen, Paul, Cedar Rapids
Stephen, Raymond J., Cedar Rapids
Stepp, James K., Manchester
Sternagel, Fred, West Des Moines
Sternberg, Walter A., Corona Del Mar, California (L.M.)
Sternhill, Isaac, Council Bluffs
Stevens, Clark W., Dubuque
Steves, Richard J., Des Moines
Stewart, John H., Ottumwa
Stewart, John K., Clinton
Stewart, William L., Mediapolis
Stickler, Robert B., Des Moines
Stimac, Emil M., Davenport
Stinard, Charles D., Glenwood
Stinson, Alice C., Estherville (L.M.)
Stitt, Paul L., Fort Dodge
Stoakes, Charles S., Lime Springs (L.M.)
Stober, Raymond W., Charles City
Stojkovic, Joseph P., Iowa City
Storck, Robert D., Dubuque
Strand, Clarence M., Dubuque
Strathman, Lawrence C., Shenandoah
Straub, Joseph J., Dubuque
Straumanis, Janis, Solon
Strawn, John T., Vinton (L.M.)
Stroy, Herbert E., Osceola
Stuart, Percy E., Nashua (L.M.)
Stueland, Alvin J. R., Mason City
Stumme, Ernest H., Denver
Suchomel, Thomas F., Cedar Rapids
Sullivan, Daniel J., Sutherland
Sullivan, John E., Des Moines
Sullivan, John J., Davenport
Sullivan, John V., Carroll
Sulzbach, John F., Burlington
Summers, Thomas B., Iowa City
Sun, Kuei shu, Ames
Sunderbruch, John H., Davenport
Sutton, Gerald H., Boone
Svendsen, Reinert N., Keokuk
Swann, Raymond O., Iowa City
Swanson, Eric M., Fort Dodge
Swanson, Gerald W., Lamoni
Swanson, Leslie W., Mason City
Swayze, V. Warren, Muscatine
Sweeney, Lloyd J., Sanborn
Swift, Frederick J., Jr., Maquoketa
Swift, Frederick J., Sr., Maquoketa (L.M.)
Sybenga, Jacob B., Pella
Synhorst, John B., Des Moines (A.M.)
Sywassink, George A., Muscatine

Tabor, James R., Marion
Tait, John H., Des Moines
Tamisiea, Francis X., Missouri Valley
Taylor, Charles B., Claremont, California (L.M.)
Taylor, Charles I., Pomeroy (L.M.)
Taylor, Donald E., Stuart
Taylor, James H., Clinton
Taylor, Lawrence A., Ottumwa
Taylor, Maude, Ottumwa (L.M.)
Taylor, Robert S., Davenport
Taylor, Wendel W., Sheffield
Teigland, Joel D., Des Moines
Telfer, William L., Waterloo
Tempel, Paul F., Crystal Lake, Illinois
Teufel, John C., Davenport (L.M.)
Thaler, David, Cedar Rapids
Tharp, Herbert M., Monroe
Thatcher, Wilbur C., Fort Dodge
Theilen, Ernest O., Iowa City
Theisen, Roy I., Dubuque
Thielen, Edward W., Waterloo
Thielen, John B., Fonda
Thoman, William S., Sioux City
Thomas, Clifford W., Mason City
Thomas, Clyde E., Keystone
Thomas, Colin G., Monticello
★Thomas, Gary L., Randolph AFB, Texas
Thomas, James H., Sibley
Thomas, James R., Evansdale
Thomas, William H., McGregor (L.M.)
Thompson, E. Dean, Jefferson
Thompson, Howard E., Dubuque (L.M.)
Thompson, James R., Waterloo (L.M.)
Thompson, Kenneth L., Oakland
Thompson, Virginia D., Des Moines
Thomsen, John G., Des Moines
Thorburn, Oral L., Ames
Thornton, F. Eberle, Des Moines
Thornton, George H. M., Iowa City
Thornton, John W., Lansing
Thornton, Thomas F., Waterloo
Thornton, Thomas F., Jr., Waterloo
Thorson, John A., Dubuque
Throckmorton, J. Fred, Des Moines
Throckmorton, Jeannette D., Des Moines (L.M.)
Throckmorton, Scott L., Chariton
Throckmorton, Tom B., Des Moines
Throckmorton, Tom D., Des Moines
Tice, Claude B., Mason City (L.M.)
Tice, George I., Mason City
Tice, W. Arnold, Waterloo
Tidrick, Robert T., Iowa City
Tiedeman, John P., Sioux City
Tierney, Edmund J., Sioux City
Tierney, James M., Carroll
Tilton, John J., Bellevue
Todd, Donald W., Guthrie Center
Todd, Robert L., Burlington
Tolliver, Hillard A., Charles City
Top, Franklin H., Iowa City
Toubes, Abraham A., Des Moines
TouVelle, Alwyn R., Bettendorf
Towle, Robert A., Davenport
Tracy, John S., Sioux City
Trafton, Harold F., Council Bluffs
Traister, John E., Eddyville (L.M.)
Trefz, Donald L., Nashua
Trey, Bernard L., Marshalltown
Treynor, Jack V., Council Bluffs
Trier, Paul J., Des Moines
Trotzig, Joseph P., Akron
Troxel, John F., Cedar Rapids
Troxell, Millard A., Cedar Rapids
Trueblood, Clare A., Indianola
Trumpe, William D., Cedar Rapids
Trunnell, Thomas L., Waterloo
Tucker, Francis C., Cedar Rapids
Turner, George E., Des Moines
Turner, Howard V., Des Moines
Turner, Rosalie C., Nashua
Turner, Roy M., Armstrong
Turner, William R., Fort Dodge
Tyler, Donald E., Fort Dodge
Tyrrell, John E., Manchester

Uchiyama, John K., Des Moines
Undem, Dale W., Jeffersonville, Indiana
Underriner, Robert E., Holstein
Updegraff, Charles L., Boone
Updegraff, Robert R., Des Moines
Updegraff, Thomas R., Waterloo
Utne, John R., Mason City
Utterback, Robert A., Iowa City

Valiquette, Frank G., Sioux City
Van Bemmel, Piet F., Ames
Van Camp, Thomas H., Breda
Vander Meulen, Herman C., Pella
Vander Stoep, Harry L., LeMars
Van Eldik, Dick L., Lake Worth, Florida
Van Epps, Clarence E., Iowa City (L.M.)
Van Epps, Eugene F., Iowa City
Vangsness, Ingmar U., Sioux City
Van Metre, Paul W., Rockwell City
Van Natta, Carlton W., West Des Moines
Van Patten, E. Martin, Fort Dodge
Van Tiger, William H., Eldora
Van Werden, Benjamin D., Keokuk
Van Wetzinga, Russell J., Bettendorf
Van Zante, Peter, Pella
Vaubel, Ellis K., Estherville
Vaughn, Vincent J., Ottumwa
Veldhouse, Richard H., Cedar Rapids
Veley, Robert W., Cedar Rapids
Vercio, Raymond A., Burlington
Vernon, Robert G., Dubuque
Vespa, Raymond, Des Moines
Victorine, Edward M., Cedar Rapids
Vincent, Jack F., Fort Dodge
Viner, Thomas R., Leon
Vineyard, Thomas L., Ottumwa
Voigt, Ernest J., Burlington
Voigt, Franz O. W., Oskaloosa
von Lackum, J. Kenneth, Cedar Rapids
Vorhes, Carl E., Sheldon
Vorisek, Elmer A., Des Moines
Vorpahl, Rudolph A., Cedar Rapids (L.M.)
Vosika, Edward J., Frankfort, Illinois
Voss, Edward C., Jr., Iowa City
Voss, Otto R., Davenport (L.M.)

Waggoner, Charles V., Clinton
Wagner, Donald J., Sioux City
Wagner, Eugene C., Plainfield
Wahrer, Frederick L., Marshalltown
Wainwright, Max T., Sioux City
Walker, Charles C., Des Moines
Walker, Glenn L., Burlington
Walker, Harry L., Cedar Rapids (L.M.)
Walker, Herbert P., Clarion (L.M.)
Walker, John R., Waterloo
Walker, Thomas S., Riceville (L.M.)
Walker, William M., Iowa City
Wall, David, Ames
Wall, John M., Boone
Wallace, Leo F., Burlington
Walliker, Wilbur M., Clinton (L.M.)
Walsh, William E., Hawkeye
Walston, Edwin B., Des Moines (L.M.)
Walston, James H., Sioux City
Walter, Dennis J., Des Moines
Walton, Seth G., Hampton
Walz, Donald V., Iowa City
Wanamaker, A. Roy, Hamburg
Ward, Donovan F., Dubuque
Ward, Loraine W., Oelwein
Warden, Duane D., Council Bluffs
Ware, John, Mount Vernon
Ware, Stephen C., Iowa City
Ware, Thomas A., Sioux City
Warner, Emory D., Iowa City
Warner, Paul L., Wesley
Waterbury, Charles A., Jr., Waterloo
Watson, Charles F., Fairfield
Watson, Elbert J., Diagonal (L.M.)
Watters, George H., Des Moines
Watts, A. Fred, Creston
Watts, Campbell F., Cedar Rapids
Watts, Clyde F., Marengo
Weaver, David F., Davenport
Weaver, Kenneth H., Union
Weaver, Ralph L., Cumberland
Webb, Daniel R., Oakdale
Weber, Frank N., Walnut
Weber, William W., Pomeroy
Weems, Nev E., Paullina
Weideman, Don C., Vinton
Weih, Elmer P., Clinton
Weikel, Vernon E., Sioux City
Weinberg, Harry B., Davenport
Weingart, Julius S., Des Moines
Weis, Howard A., Davenport
Weland, Regis E., Cedar Rapids
Wellman, Thomas G., Clinton
Wells, Rodney C., Marshalltown
Wentworth, Laydon S., Marble Rock
Wentzien, Albert J., Tama
Werner, Harold T., Fort Madison
Wessels, William R., Marshalltown
West, Alroy G., Council Bluffs
West, Norman D., Avoca
West, Walter E., Centerville (L.M.)
Westly, G. Travis, Mason City
Westly, J. Stephen, Mason City
Weston, B. Raymond, Mason City
Weston, Robert A., Des Moines (L.M.)
Wetrich, Max F., Grand Junction

Weyhrauch, Robert A., Waterloo
Weyer, Joseph J., Fort Dodge
Wheeler, Richard A., Des Moines
Whitaker, Ben T., Boone
White, George H., Des Moines
Whitehouse, William N., Ottumwa
Whitley, Ralph L., Osage (L.M.)
Whitmer, Lysle H., Muscatine
Whitmire, James E., Sumner
Whitmire, William L., Sumner (L.M.)
Wichern, Homer E., Des Moines
Wicklund, Maurice M., Waterloo
Wicks, Ralph L., Boone
Wickstrum, Arthur P., Iowa City
Widmer, James G., Wayland
Widmer, Reuben B., Winfield
Wiedemeier, Joseph L., Sioux City
Wilcox, Delano, Malcom (L.M.)
Wilcox, Dwain E., Atlantic
Wilcox, Edgar B., Oskaloosa
Wilcox, Keith E., Muscatine
Wilcox, Kenneth M., Fort Dodge
Wilcox, Robert A., Iowa City
Wildberger, William C., Perry
Wilhelmi, Raymond W., Sioux City
Wilke, Frank A., Perry
Wilkinson, Levi J., Marshalltown (L.M.)
Willett, Wilton J., Manchester
Williams, Frank S., Villisca (L.M.)
Williams, Lawrence B., Maquoketa
Williams, Nathan B., Belle Plaine
Wilson, Charles R., Manson
Wilson, F. Dale, Davenport
Wilson, Frederic L., Sioux City
Wilson, Frederic W., Sioux City
Wilson, Robert G., Missouri Valley
Winder, Clifford D., Waterloo
Winninger, Louis T., Waterloo
Winter, F. Donald, Burlington
Wirtz, Dwight C., Des Moines
Wise, Arthur C., Iowa City
Wise, James H., Cherokee
Wolcott, Ruth F., Spirit Lake
Wolf, Henry H., Elgin
Wolf, William J., West Union
Wolfe, Otis D., Marshalltown
Wolfe, Russell M., Marshalltown
Wolfe, Wilson C., Ottumwa
Wolff, Harold D., Iowa City
Wolfson, Harold, Kingsley
Wolpert, Paul L., Onawa
Wolters, Donald E., Estherville
Wolverton, Benjamin F., Cedar Rapids
Wood, John R., Wadena
Woodard, Floyd O., Des Moines
Woodard, Ralph E., Iowa City
*Woodbridge, James W., Madera, California (L.M.)
Woodburn, Chester C., Jr., Des Moines
Woodhouse, George R., Vinton
Woodhouse, Keith W., Cedar Rapids
Woodward, Arthur W., Waterloo
Woodward, Lee R., Mason City
Wooters, Richard C., Des Moines
Wormhoudt, Herbert L., Ottumwa
Worrell, James T., Keosauqua
Wray, Clarence M., Iowa Falls (L.M.)
Wray, Robert M., Cedar Rapids
Wright, David W., Decorah
Wright, Thomas D., Newton
Wubbena, Arthur C., Rock Rapids
Wunschel, Richard C., Davenport
Wurtzer, Ezra L., Clear Lake
Wyatt, George M., Iowa City
Wykoff, Sarah U., Des Moines

Yein, Chung Sung, Waterloo
Yetter, William L., Iowa City
Yocom, Albert L., Chariton
York, Dallas L., Villisca
*Young, Henry C., Bloomfield (L.M.)
Young, Ernest R., Dubuque (L.M.)
Young, George G., Des Moines
Young, Howard O., Marion
Young, James J., Clinton
Young, Richard A., Clarion
Yugend, Sidney F., Indianola

Zabloudil, Warren C., Preston
Zager, Lewis L., Waterloo
Zehr, Earl E., Guttenberg
Zibilich, George J., Lone Tree
Ziffren, Sidney E., Iowa City
Zimmerer, Edmund G., Des Moines
Zimmerman, George R., Iowa City
Zoeckler, Samuel J., Des Moines
*Zuercher, Arlo R., Cedar Rapids
Zukerman, Cecil M., Davenport

★ Military Service
* Deceased
(L.M.) Life Member
(A.M.) Associate Member

FIFTY YEAR CLUB MEMBERS

June 15, 1957

Acher, Albert E. Fort Dodge
Baldwin, Leon A. Riverton
Barbour, Howard W. Mason City
Barr, Guy E. Sioux City
Bell, Edward P. Pleasantville
Bierring, Walter L. Des Moines
Bigelow, Charles T. La Grange, Ill.
Binford, William S. Davenport
Birney, Cleanthus E. Estherville
Boice, Clyde A. Washington
Boiler, William F. Iowa City
Bowers, Arthur S. Orient
Bowie, Louis L. Marshalltown
Boyer, Howard C. Council Bluffs
Bruce, James H. Fort Dodge
Bullock, William E. Lake Park
Burcham, Thomas A. Des Moines
Cantwell, John D. Davenport
Carlile, Amos W. Manning
Carson, Andros Des Moines
Chase, William B., Sr. Des Moines
Chittum, John H. Wapello
Clasen, Henry W. Littleton, Colo.
Cole, Elmer J. Woodbine
Conmey, Roy M. Sergeant Bluff
Cooper, Jay C. Villisca
Crain, Mattie M. Deep River
Cretzmeyer, Francis X. Emmetsburg
Crew, Arthur E. Marion
Dean, William F. Osceola
Decker, Jay C. Sioux City
Dingman, Marshall E. Urbana
Downing, Leroy M. Cedar Rapids
Dulin, Tarana J. G. Iowa City
Dunn, James Davenport
Ellyson, Charles W. Waterloo
Foulk, Frank E. Backus, Minn.
Fullerton, Oscar L. Redding
Gardner, John R. Lisbon
Gearhart, George W. Springville
Gillmor, Benjamin F. Red Oak
Givens, H. Frank West Bend
Gray, John F. Melcher
Griffin, Frank L. Baldwin
Gutch, Thomas E. Albia
Hansen, Robert R. Marshalltown
Harken, Conreid Osceola
Harkness, Gordon F. Davenport
Harrington, Burton Cedar Rapids
Harris, Ray R. Dubuque
Heady, Conda C. C. Bloomfield
Heald, Clarence L. Sigourney
Henry, Clyde A. Farson
Hill, James W. Mount Ayr
Hoffman, Paul M. Tipton
Hollis, Edward L. Marengo
Houser, Cass T. Cedar Rapids
Housholder, Harold A. Winthrop
Howell, Elias B. Ottumwa
Hudek, Joseph W. Garnavillo
Ihle, Charles W. Cleghorn
Jackson, James M. Jefferson
Jaenicke, Kurt Clinton
James, Lora D. Fairfield

James, Peter E. Audubon
Janse, Phillip V. Algona
Jarvis, Harry D. Chariton
Jastram, Alfred H. Remsen
Jenkins, George A. Albia
Johnson, Amos F. Manilla
Jones, Charles L. Gilmore City
Jones, Harry J. Cedar Rapids
Kahler, Hugo V. Reinbeck
Keech, Roy F. Cedar Rapids
Kennedy, Elizabeth S. Oelwein
Kern, Lester C. Waverly
Keyser, Ralph E. Marshalltown
Kisor, Frank H. Mechanicsville
Knox, James M. Cedar Rapids
Kuhl, Augustus B. Davenport
Kyle, William S. Washington
Losh, Clifford W. Des Moines
Luke, Edward Coin
McBurney, George F. Belmond
McDowall, Gilbert T. Gladbrook
Marble, Pearl L. Liscomb
Maresh, George W. Denver, Colo.
Mason, Stella M. Mason City
Merkel, Arthur E. Des Moines
Merritt, Arthur M. Des Moines
Meyers, Frank W. Dubuque
Minassian, Harootune A. Des Moines
Mitchell, Claire H. Cincinnati
Morrison, John W. Alta
Morse, Charles H. Fort Dodge
Mott, William H. Farmington
Murchison, Kenneth Sidney
Murray, Frederick G. Cedar Rapids
Nash, Edwin A. Des Moines
Neal, Emma J. Cedar Rapids
Neuzil, William J. Cedar Rapids
Niblock, George F. Homewood, Ill.
Nicoll, David T. Mitchellville
O'Donoghue, James H. Atlantic
Oggel, Herman D. Maurice
Olsen, Martin I. Des Moines
Parker, Robert L. Des Moines
Patterson, John N. Burlington
Pfeiffer, Harry E. Riviera Beach, Fla.
Phillips, Albin B. Clear Lake
Posner, Edward R. Des Moines
Price, Alfred S. Des Moines
Quire, Frank E. Lynnville
Rambo, David T. Ottumwa
Rankin, William Keokuk
Raw, Elmer J. Pierson
Redmond, Thomas M. Monticello
Rinker, George C. Oto
Robb, James B. College Park, Md.
Robinson, Robert E. Waverly
Rodemeyer, Frederick H. Sheffield
Rogers, Claude B. Earlville
Rominger, Clark W. Waukon
Royal, Lester A. West Liberty
Royal, Malcolm A. Des Moines
Rowley, William G. Sioux City
Ruml, Wentzle Cedar Rapids
Rust, Emery A. Webb
Sams, Joseph H. Clarion
Sanders, William E. Tucson, Ariz.
Scott, Sophie H. Des Moines
Sellards, Joseph W. Clarinda
Sells, Benjamin B. Independence
Shelton, Charles D. Bloomfield
Sinning, Augustus Iowa City
Smead, Leslie L. Newton
Smith, John E. Clarence
Spain, Robert T. Conrad
Steindler, Arthur Iowa City
Sternberg, Walter A. Corona Del Mar, Calif.
Stinson, Alice C. Estherville
Stuart, Percy E. Nashua
Taylor, Maude Ottumwa
Teufel, John C. Davenport
Thomas, William H. McGregor
Thompson, James R. Waterloo
Tinsman, Eugene S. Orient
Traister, John E. Eddyville
Van Epps, Clarence E. Iowa City
Vorpahl, Rudolph A. Cedar Rapids
Voss, Otto R. Davenport
Walker, Harry L. Cedar Rapids
Walliker, Wilbur M. Clinton
Walsh, Thomas N. Hawkeye
Walston, Edwin B. Des Moines
Watson, Elbert J. Diagonal
Westenberger, Joseph C. St. Ansgar
Weston, Robert A. Des Moines
Whitley, Ralph L. Osage
Whitmire, William L. Sumner
Wilkinson, Levi J. Marshalltown
Wray, Clarence M. Iowa Falls
Young, Ernest R. Dubuque

Membership Roster of the Woman's Auxiliary To the Iowa State Medical Society

Membership in Good Standing as of June 15, 1957

Abbott, Mrs. W. D., Des Moines
Acher, Mrs. A. E., Fort Dodge
Acker, Mrs. R. D., Waterloo
Acker, Mrs. W. H., Waterloo
Addison, Mrs. C. P., Waterloo
Aid, Mrs. F. H., Burlington
Alberti, Mrs. R. L., Oskaloosa
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Allen, Mrs. M. B., Fort Dodge
Allen, Mrs. R. B., Burlington
Allender, Mrs. R. B., Des Moines
Allison, Mrs. M. P., Northwood
Alt, Mrs. L. P.. Dubuque
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Anderson, Mrs. H. M., Strawberry Point
Anderson, Mrs. H. N., Des Moines
Anderson, Mrs. J. D., Des Moines
Anderson, Mrs. W. D., Des Moines
Anthony, Mrs. W. E., Ottumwa
Armstrong, Mrs. M. A., Newell
Arnold, Mrs. K. E., Sioux City
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Ashline, Mrs. G. H., Keokuk
Atkinson, Mrs. G. S., Oskaloosa
Augspurger, Mrs. B. B., Des Moines
Ayers, Mrs. L. J., Sioux City

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Baker, Mrs. C. J., Fort Dodge
Baker, Mrs. J. N., Cedar Falls
Bakody, Mrs. J. T.. Des Moines
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Barrent, Mrs. M. E., Clinton
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Bartley, Mrs. R. L., Audubon
Barton, Mrs. R. L., Dubuque
Basinger, Mrs. B. L., Goldfield
Bastron, Mrs. H. C., Red Oak
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Beitenman, Mrs. E. T., Guthrie Center
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Bennett, Mrs. G. W., Oskaloosa
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Blome, Mrs. G. C., Ottumwa
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Boden, Mrs. W. C., Sioux City
Boe, Mrs. Henry, Sioux City
Boice, Mrs. C. A., Washington
Boller, Mrs. G. C., Waterloo
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Bos, Mrs. H. C., Oskaloosa
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Brink, Mrs. J. R., Emmetsburg
Brinker, Mrs. M. H., Jefferson
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Brown, Mrs. E. F., Webster City
Brown, Mrs. I. E., Hartley
Brown, Mrs. J. M., Sioux City
Brown, Mrs. K. R., Leon
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Bruner, Mrs. J. M., Des Moines
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Bullock, Mrs. G. D., Inwood
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Burr, Mrs. C. L., Des Moines
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Bushnell, Mrs. J. W., Sioux City
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Buxton, Mrs. O. C., Jr, Webster City

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Campbell, Mrs. T. R., Sioux Rapids
Campbell, Mrs. W. V., Oskaloosa
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Clark, Mrs. J. P., Estherville
Clark, Mrs. R. E., Manchester
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Collins, Mrs. J. F., Fort Dodge
Collison, Mrs. R. M., Oskaloosa
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Cooper, Mrs. D. C., Ford Dodge
Cooper, Mrs. R. E., Keokuk
Cooper, Mrs. T. C., Ogden
Coppoc, Mrs. L. E., Ottumwa
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Darrow, Mrs. C. A., Dubuque
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Dawson, Mrs. E. B., Fort Dodge
Dawson, Mrs. Robert, Graettinger
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Decker, Mrs. J. C., Sioux City
Deering, Mrs. A. B., Boone
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Ditto, Mrs. W. B., Burlington
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Downing, Mrs. J. A., Des Moines
Downing, Mrs. W. L., LeMars
Downs, Mrs. V. S., Ottumwa
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Drown, Mrs. R. E., Fort Dodge
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Dunn, Mrs. R. C., Fort Dodge
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Eckart, Mrs. E. P., Fort Dodge
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Eller, Mrs. W. C., Waterloo
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Ellison, Mrs. G. M., Clinton
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Ellyson, Mrs. C. W., Waterloo
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Emanuel, Mrs. D. G., Ottumwa
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Entringer, Mrs. A. J., Dubuque
Entz, Mrs. F. H., Waterloo
Erickson, Mrs. E. D., Sioux City

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Fail, Mrs. C. S., Adel
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Fee, Mrs. C. H., Denison
Feldick, Mrs. H. G., Buffalo Center
Fellows, Mrs. J. G., Ames
Felter, Mrs. A. G., Van Meter
Fenton, Mrs. C. D., Bloomfield
Ferguson, Mrs. J. W., Newton
Ferlic, Mrs. R. J., Carroll
Fickel, Mrs. J. D., Red Oak
Fieseler, Mrs. W. R., Fort Dodge
Fieselmann, Mrs. G. F., Spencer
Fitzgerald, Mrs. J. D., Sloan
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Fordyce, Mrs. F. W., Johnston
Foss, Mrs. J. F., Burlington
Foster, Mrs. W. H., Clinton
Fox, Mrs. Stephan, Ottumwa
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Franklin, Mrs. G. W., Jefferson
Fraser, Mrs. J. B., Des Moines
Frenkel, Mrs. H. S., Clarinda
Friday, Mrs. W. C., Burlington
Frink, Mrs. L. E., Reinbeck
Frink, Mrs. L. F., Spencer
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Furumoto, Mrs. Kiyoshi, Keosauqua

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Gangeness, Mrs. L. G., Des Moines
Ganzhorn, Mrs. H. L., Mapleton
Gardner, Mrs. H. O., Waterloo
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Garred, Mrs. J. L., Whiting
Gaukel, Mrs. L. A., Onawa
Gee, Mrs. K. J., Shenandoah
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Gerken, Mrs. J. F., Waterloo
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Gibson, Mrs. P. E., Des Moines
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Gilfillan, Mrs. E. O., Bloomfield
Gilfillan, Mrs. G. W., Bloomfield
Gilfillan, Mrs. H. J., Jr., Bloomfield
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Gittler, Mrs. Ludwig, Fairfield
Glaess, Mrs. A. W., Clinton
Glesne, Mrs. O. N., Fort Dodge
Goad, Mrs. R. R., Muscatine
Goldberg, Mrs. L., Des Moines
Goodman, Mrs. L. O., Marshalltown
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Gould, Mrs. G. R., Grundy Center
Gower, Mrs. W. E., Fort Dodge
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Greco, Mrs. L. R., Boone
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Green, Mrs. J. W., Des Moines
Greenhill, Mrs. Solomon, Des Moines
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Griffith, Mrs. W. H., Clinton
Griffith, Mrs. W. O., Council Bluffs
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Gutch, Mrs. T. E., Albia

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Hansell, Mrs. W. W., Des Moines
Hansen, Mrs. F. A., Red Oak
Hansen, Mrs. R. R., Marshalltown
Hansen, Mrs. R. R., Storm Lake
Hanson, Mrs. C. A., Waterloo
Hanssmann, Mrs. I. J., Council Bluffs
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Harris, Mrs. G. W., Marshalltown
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Hastings, Mrs. R. A., Ottumwa
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Hayne, Mrs. W. W., Des Moines
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Hegg, Mrs. L. R., Rock Valley
Heileman, Mrs. R. D., Sioux City
Heimann, Mrs. V. R., Sioux City
Heise, Mrs. H. R., Marshalltown
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Hicks, Mrs. W. K., Sioux City
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Hines, Mrs. R. E., Des Moines
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Howell, Mrs. E. B., Ottumwa
Huber, Mrs. R. A., Charter Oak
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Hughes, Mrs. R. O., Ottumwa
Hull, Mrs. G. I., West Des Moines
Huston, Mrs. K. G., Des Moines
Huston, Mrs. M. D., Cedar Falls
Hyde, Mrs. J. R., Emmetsburg

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Jacobs, Mrs. E. L., Conrad
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Jeffries, Mrs. M. E., Marshalltown
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Jenks, Mrs. A. L., Des Moines
Jensen, Mrs. K. V., Clarinda
Johnson, Mrs. A. Q., Sioux City
Johnson, Mrs. H. A., Atlantic
Johnson, Mrs. N. M., Clarinda
Johnson, Mrs. R. G., Ottumwa
Johnson, Mrs. R. M., Des Moines
Johnson, Mrs. V. P., Des Moines
Johnston, Mrs. C. H., Des Moines
Johnston, Mrs. E. V., Waterloo
Johnston, Mrs. G. B., Estherville
Johnston, Mrs. W. A., Dubuque
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Jones, Mrs. C. C., Des Moines
Jones, Mrs. H. W., Sioux City
Jongewaard, Mrs. A. J., Jefferson
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Juel, Mrs. E. M., Atlantic

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Katzmann, Mrs. F. S., Des Moines
Keane, Mrs. K. M., Sioux City
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Kelley, Mrs. J. H., Des Moines
Kelley, Mrs. N. R., Des Moines
Kelly, Mrs. A. H., Sioux City
Kelly, Mrs. J. F., Sioux City
Kelly, Mrs. W. J., Dubuque
Keohen, Mrs. G. F., Dubuque
Kern, Mrs. G. A., Des Moines
Kershner, Mrs. F. O., Clinton
Kersten, Mrs. E. M., Fort Dodge
Kersten, Mrs. H. H., Fort Dodge
Kersten, Mrs. J. R., Fort Dodge
Kersten, Mrs. P. M., Fort Dodge
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King, Mrs. D. H., Spencer
King, Mrs. R. C., Clinton
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Kleinburg, Mrs. H. E., Des Moines
Klocksiem, Mrs. H. L., Des Moines
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Knosp, Mrs. A. A., Paton
Knott, Mrs. P. D., Sioux City
Knowles, Mrs. F. L., Fort Dodge
Knox, Mrs. R. M., Des Moines
Knutsen, Mrs. Arne, Sioux City
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Kruse, Mrs. R. H., Marshalltown
Kuehn, Mrs. W. O., Clarinda
Kuhn, Mrs. M. A., Waterloo

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Langdon, Mrs. F. B., Des Moines
LaPorte, Mrs. P. A., Wellsburg
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Larimer, Mrs. R. N., Sioux City
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Larsen, Mrs. F. S., Fort Dodge
Larsen, Mrs. H. T., Fort Dodge
Larsen, Mrs. L. V., Harlan
Larson, Mrs. G. E., Elk Horn
Larson, Mrs. L. E., Decorah
Larson, Mrs. M. O., Hawarden
LaRue, Mrs. J. L., Anita
Latchem, Mrs. C. W., Des Moines
Laube, Mrs. P. J., Dubuque
Lawler, Mrs. M. P., Jr., Des Moines
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Lederman, Mrs. Joseph, Oskaloosa
Lee, Mrs. W. R., Burlington
Leehey, Mrs. P. J., Independence
Leffert, Mrs. F. B., Centerville
Leighton, Mrs. L. L., Fort Dodge
Leinbach, Mrs. S. P., Belmond
Leiter, Mrs. H. C., Sioux City
Lemon, Mrs. K. M., Oskaloosa
Leonard, Mrs. T. K., Madrid
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Limburg, Mrs. J. I., Jr., Jefferson
Lindell, Mrs. S. E., LeMars
Linder, Mrs. E. E., Ogden
Lindholm, Mrs. C. V., Armstrong
Lindholm, Mrs. Hugo, Estherville
Liska, Mrs. E. J., Ute
Lister, Mrs. E. E., Dallas Center
Lister, Mrs. K. E., Ottumwa
Loeck, Mrs. J. F., Independence
Lohmann, Mrs. C. J., Burlington

Lohr, Mrs. P. E., Churdan
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Loomis, Mrs. F. G., Waterloo
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Lovejoy, Mrs. E. P., Des Moines
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Lulu, Mrs. D. J., Des Moines
Lutton, Mrs. J. D., Sioux City

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McClellan, Mrs. J. W., Onawa
McClurg, Mrs. F. H., Fairfield
McCool, Mrs. R. F., Clarion
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McGahey, Mrs. W. B., Webster City
McGarvey, Mrs. N. J., Des Moines
McGeehon, Mrs. R. C., Indianola
McGilvra, Mrs. A. L., Sioux Center
McIntosh, Mrs. P. D., Ottumwa
McKay, Mrs. R. V., Dubuque
McKean, Mrs. F. F., Allison
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McMurray, Mrs. H. N., Burlington
McNamara, Mrs. R. J., Dubuque
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Maloy, Mrs. W. H., Shenandoah
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Maris, Mrs. Cornelius, Sanborn
Mark, Mrs. M. S., Des Moines
Markham, Mrs. W. S., Harlan
Marme, Mrs. G. W., DeWitt
Marquis, Mrs. F. M., Waterloo
Marquis, Mrs. G. S., Des Moines
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To

Walter Lawrence Bierring

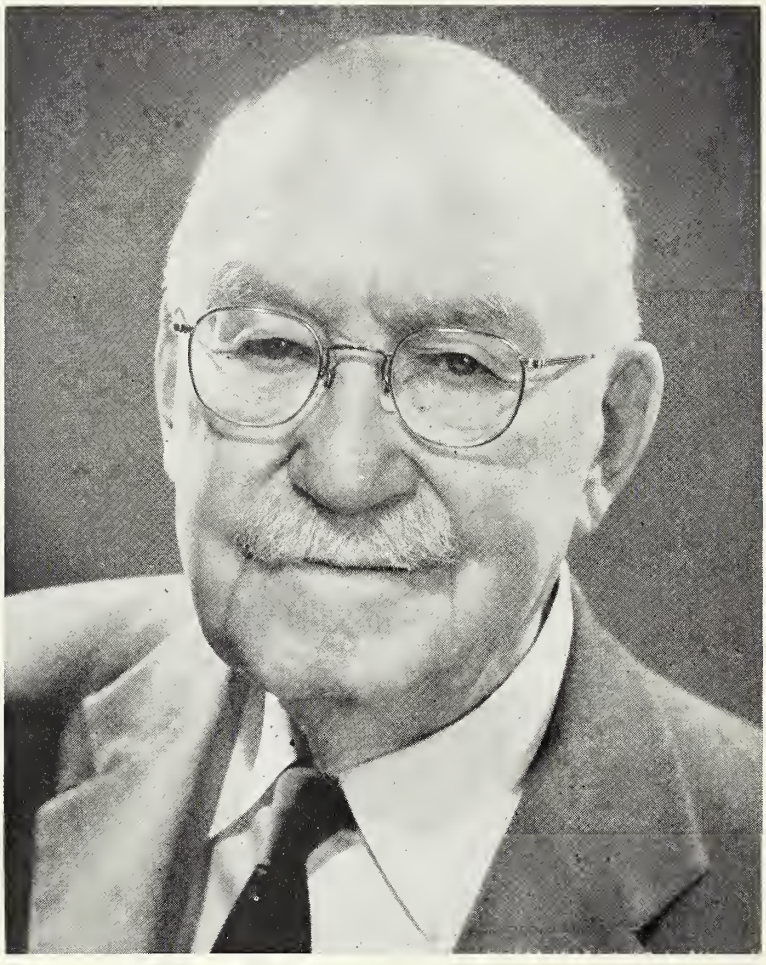
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Walter A. Dierring

Iowa's Osler

JOSEPH B. PRIESTLEY, M.D.

DES MOINES

If one were to look for a man whose life most completely parallels that of Sir William Osler (1850-1919), he could only choose Dr. Walter Lawrence Bierring. Both men came from sturdy stock; lack of money required both to engage in nonmedical work in order to meet the expenses of a medical education; both have been responsible for medical advances that we have long since come to consider commonplace; both have become renowned for the acuity of their personal observations; and far-reaching foresight put both of them far ahead of their times not only in the actual practice of Medicine and in their theories regarding the teaching of Medicine, but also in the formulation of medical ideals.

Walter Lawrence Bierring was born in Davenport, Iowa, on July 15, 1868, of Danish parentage. His father and mother, Jeppe and Elizabeth (Jessen) Bierring, had come to Davenport directly after their marriage in Denmark in the spring of 1866. The elder Bierring, after a seafaring experience of 16 years that had taken him into most of the seas of the world and had included three years' service in the U. S. Navy (1861-1864), had been induced by his bride to settle inland, as far away from the sea as possible. Since Davenport contained a preponderance of German-speaking people, Walter's mother insisted that he learn German as well as Danish and English, and in later years he put his knowledge of that language to good use when he attended the medical schools at German universities.

The young Bierring spent his boyhood in his native city, and for 2½ years, from 1879 to 1882, he was a carrier for the Davenport Democrat (now the Davenport Times Democrat). Because there was a professional team in town, he became greatly interested in baseball, and one of the vivid memories of his boyhood is that of seeing Billy Sunday run the bases in 14 seconds.

An injury to young Bierring's right foot and leg in a railroad accident interfered with his preliminary education, but brought him in contact with two outstanding physicians of the period who were practicing in Davenport, Dr. Washington F. Peck, dean and professor of surgery, and Dr. William D. Middleton, professor of physiology and principles of medicine at the SUI medical school. It was they who were most directly influential in his deciding to study medicine, and they became his preceptors when he enrolled as a medical student in 1889.

In the meantime, to earn the necessary funds, Bierring completed a course at the Davenport Business College, where he acquired the graceful penmanship that he retains to this day. His commercial training led to his employment as accountant and cashier at the S. P. Bryant Company, a boot and shoe wholesale house.

He was granted the degree of doctor of medicine on March 9, 1892, after completing an approved three-year course of 5½ months each in a teaching hospital of 55 beds. During his junior and senior years, he had acted as assistant in the Department of Anatomy, and about a year before graduation he had been asked by the dean to arrange for a two-year postgraduate tour of the European medical centers as preparation for assuming the chair of pathology and bacteriology upon his return. He got his actual appointment to that professorship from the Board of Regents of the University in April, 1892, one month after his graduation.

Dr. Bierring's first postgraduate studies in Europe included a term at the University of Heidelberg, the first course in bacteriology taught by Professor Ernst, a former assistant of Professor Robert Koch, the discoverer of the tubercle bacillus, and a short experience with an epidemic of Asiatic cholera in Hamburg.

At the University of Vienna, he had an opportunity to study a great variety of diseases under the masters of that day, and to come into contact with Professor Theodor Billroth, a pioneer in antiseptic and visceral surgery in Europe. In addition, he had the special privilege of being a student in 1894 at the Pasteur Institute, in Paris, under the eminent French scientist Dr. Louis Pasteur, father of bacteriology, and his associates Drs. Eli Netchnikoff and Emile Roux. There for the first time, the bacillus pestis, the microorganism responsible for bubonic plague, was studied, and immunized horses were used in the preparation of large amounts of diphtheria antitoxin. In consequence of his participation in that work, Dr. Bierring was able, the following year in Iowa City, to provide the first diphtheria antitoxin available west of New York City.

Pasteur had changed the concept of the cause, prevention and control of many diseases, and thus had ushered in a new era in Medicine and influenced the medical thought of the entire world. Dr. Bierring had a major part in disseminating his doctrines.

In 1896 and in 1901 Dr. Bierring made other visits to Europe and took six-month courses of postgraduate study in Vienna, Prague, Berlin, Paris and London.

MEDICAL TEACHING

Dr. Bierring's service to Medicine and the hu-

manities may be divided into three periods of approximately 20 years each. His career as a teacher included 17 years at the State University of Iowa and three years at Drake University. In the ensuing 20 years, he conducted an active consultation practice in internal medicine, and in the most recent period he has been principally concerned with public health administration, for 20 years as Iowa State Commissioner of Health and currently as director of a new division of the State Department of Health, that of Gerontology, Heart and Chronic Diseases.

During this period of more than six decades, the most remarkable evolutionary advance in medical education and medical practice has taken place. The impress of the masters of an older civilization brought laboratory and bedside medical teaching to every institution in this country that is concerned with the training of physicians. In consequence, many of the epoch making discoveries of the last half century have come from research institutes, laboratories and clinics in the United States and Canada. Yellow fever was brought under control in Cuba and the Isthmus of Panama, Rocky Mountain spotted fever was conquered in Montana and Mexico, and typhus fever and malaria have become rare diseases even in the southern states.

A further triumph has been the preventive immunization against typhoid fever, diphtheria and tetanus. The discovery of insulin in 1922 brought diabetus mellitus under control, and liver therapy perfected in 1926 furnished a means of combatting pernicious anemia. The contribution of Dr. James B. Herrick in 1912 regarding coronary thrombosis improved our knowledge of the diagnosis and treatment of coronary-artery heart disease.

Owing to increasing interest in the special training of physicians in preventive medicine and public health, the American Board of Preventive Medicine and Public Health, Inc., was organized in 1947. Dr. Bierring was its first chairman and has continued in that position until November 1956 when he was named chairman emeritus. He also

The introduction of antibiotics ushered in a new era in the treatment of infectious diseases—first with chemicals such as the sulfa drugs, then with drugs of bacterial origin such as penicillin, streptomycin and aureomycin. The result has been a veritable therapeutic revolution.

The discovery by Hensch and Kendall of cortisone, ACTH and other suprarenal steroids, in 1949, distinctly influenced our concepts of the natures of certain diseases and our methods of treating them.

The brilliant results of modern surgery in the relief of disease conditions of the lungs, heart and blood vessels, kidneys and other internal organs are further triumphs of the past half-century.

Dr. Bierring has had a part in nearly all phases of this remarkable medical advance. His early interests, as indicated by his publications, were in the prevention and control of infectious diseases. They then extended to diseases of the blood-forming organs, including pernicious anemia, leukemia, lymphosarcoma, chloroma and Hodgkin's disease, unusual forms of tumor such as hypernephroma, diseases of the heart (particularly heart failure and the infection of previously damaged heart valves by such diseases as subacute bacterial endocarditis), and clinical studies of diseases of the liver and kidneys.



Dr. Bierring, Sir William Osler and Col L. A. LaGarde, M.C., U.S.A., at Sir William's home, 13 Norham Gardens, Oxford, July 30, 1919.

Aside from the teaching of Medicine, he was attracted to the problems of testing knowledge of recent medical school graduates. Thus, he was one of the organizers of the National Board of Medical Examiners in 1915, and he remained a member of that group for 30 years. The comprehensive test, including a practical bedside examination formulated by leading authorities in the different subjects throughout the country, became a definite criterion for the medical training of that time, and it distinctly influenced methods of instruction in the various medical schools. The comprehensive impartial test also served to measure the physician's knowledge after the completion of his medical training for the degree of doctor of medicine.

Dr. Bierring also interested himself in the methods by which state licensing authorities might efficiently determine applicants' fitness to practice Medicine. Since 1915, he has been secretary of the

Federation of State Medical Boards of the United States, and has been editor of its BULLETIN. Thus, he has had a distinct part in raising the standards for licensure examinations. At the close of World War I, Newton D. Baker, the Secretary of War, appointed a commission consisting of Col. Victor C. Vaughn, of Ann Arbor, Col. Louis A. LaGarde, U.S.A. (MC), and Dr. Bierring to visit Great Britain and France to study the methods of training and the qualifying examinations there, with a view to the establishment of reciprocal relations in matters of medical education.

As a result of this visit, the National Board of Medical Examiners extended an invitation for a British-French commission to visit the United States in April and May, 1920.

This was sponsored by the Carnegie Foundation for the Advancement of Teaching. Dr. Bierring with other members of the National Board escorted the commission to Washington, D. C., New Orleans, St. Louis, Iowa City (enroute from St. Louis to Iowa City there was a stop-over at Des Moines where a breakfast was arranged by Dr. James Taggart Priestley at the Des Moines Club), then to Minneapolis, Rochester, Chicago, Cincinnati, Cleveland, Ann Arbor, Boston, New York City, Baltimore and Philadelphia. At the close of the tour, the members of the commission attended and participated in a three-day practical National Board examination.

In 1922, the Royal College of Physicians of Edinburgh conferred an honorary membership upon Dr. Bierring, a recognition which it had granted to no one since 1812. The citation referred to the distinguished services that Dr. Bierring had rendered.

From 1925 until 1932, Dr. Bierring served as a member of a commission on medical education of which the late president of Harvard, Dr. Lawrence Lowell, was chairman, and Dr. Willard C. Rappleye, now vice-president of Columbia University and dean of its College of Physicians and Surgeons, was medical director. The commission conducted a thorough study and survey of all phases of medical education, including premedical and postgraduate, in Canada, United States, Great Britain, Germany and France. The volume published at the completion of the study constitutes an authoritative reference in this field.

STANDARDIZING MEDICAL SPECIALTIES

The next subject that interested Dr. Bierring was the standardization of medical specialties. The Advisory Board of Medical Specialties was authorized by the AMA House of Delegates in 1933, and its membership was made to include representatives from the different agencies concerned with medical education and specialized practice.

As a member of the Board of Regents of the American College of Physicians, Dr. Bierring had a prominent part in the organization of the American Board of Internal Medicine in 1936, and was its first chairman from 1936 to 1939. He holds Certificate No. 1.

Owing to increasing interest in the special training of physicians in preventive medicine and public health, the American Board of Preventive Medicine and Public Health, Inc., was organized in 1947. Dr. Bierring was its first chairman and has continued in that position until November 1956 when he was named chairman emeritus. He also holds Certificate No. 1 from that board. The name of the organization was subsequently changed to the American Board of Preventive Medicine, Inc., and Public Health was made an affiliated specialty. In 1953, promoted by Dr. Bierring, Aviation Medicine was authorized as an affiliated specialty, and two years later, Occupational Medicine was added.

Dr. Bierring has been president of Alpha Omega Alpha Honor Medical Society since 1924, during which period he has officially installed 45 new chapters all the way from the University of British Columbia, in Vancouver, to the University of Puerto Rico, in San Juan. The traveling that he has done in Alpha Omega Alpha work has provided him an unusual opportunity to observe trends in medical education at all of the important medical schools.

His interest in public health developed early in his career. As the first professor of bacteriology at SUI, he did work in combatting diphtheria and typhoid fever that led to the establishment of the State Hygienic Laboratory of the State Board of Health, and the general use of diagnostic culture tests in diphtheria and the Widal blood-agglutination test in typhoid fever. He conducted special studies on poliomyelitis in Iowa in 1911 and 1919, and on 150 cases of undulant fever that occurred in 1929.

One of his principal objectives as state commissioner of health was to obtain at least one year of graduate training for all of the directing personnel in the State Department of Health. The numbers of persons employed as physicians, sanitary engineers, statisticians, public health nurses, health educators and specialists in such public-health services as cancer, tuberculosis, maternal and child health, mental health, industrial hygiene, and the clerical workers, increased from 28 in 1933 to 240 in 1953. His present interests are largely in the study of the medical aspects of the aging process, in differentiating the signs of aging from those of chronic illnesses, and in the development of diagnostic centers for heart disease and other forms of chronic illness. During the past nine years, he has been a consultant in internal medicine at the Veterans Administration Hospital in Des Moines.

We in Iowa who have known Dr. Bierring intimately over the years look upon him as one of the great men in Medicine. His has been a most colorful medical life. A great teacher and scientist, he has a never-aging mind and an alert vision for

everything that is best for Medicine. His name is a symbol of medical progress not only for us but for medical men throughout the rest of the United States and even in some foreign countries.

Walter Lawrence Bierring, M.D.

SOCIETY MEMBERSHIPS AND OFFICES

Aero Medical Association, honorary member 1956
Alpha Omega Alpha Honor Medical Society, president 1924-present
American Association for the Advancement of Science, fellow
American Board of Internal Medicine, chairman 1936-1939, certificate No. 1
American Board of Preventive Medicine, with affiliated specialties of Public Health, Aviation Medicine and Occupational Medicine, chairman 1947-1956, emeritus chairman 1956-present
American College of Physicians, fellow 1929, regent 1930-1939, master 1954, life member
American College of Preventive Medicine, member (founders' group)
American Heart Association, member
American Medical Association, member 1895
President 1933-35
Member House of Delegates—
Representing ISMS 1903-1907
Representing Section Pathology & Physiology 1908-1918
Representing Section Practice of Medicine 1921-1925
Section Pathology & Physiology, Secretary 1906; Chairman 1907
Section Practice of Medicine, Vice Chairman 1913; Chairman 1919
American Medical Writers' Association, member
American Public Health Association, fellow 1933, member of governing council 1933-1935, vice-president 1954, life member
Association of American Health Physicians, member (founders' group)
Association of Pathologists and Bacteriologists, member
Association of State and Territorial Health Officers, member 1940-1953
Commission on Medical Education, member 1925-1932
Commission to Study Medical Education and Qualifying Methods in France and Great Britain, member 1919
Conference of State and Provincial Health Authorities of North America, president 1945-1947, life member
Drake University, professor of medicine 1910-1914
Federation of State Medical Boards of the United States, secretary-treasurer and editor of the BULLETIN 1915-present
Gerontological Society, Inc., fellow
Iowa Clinical Society, honorary member
Iowa Heart Association, member
Iowa Mental Hygiene Association, member
Iowa Public Health Association, life member
Iowa State Board of Health and Medical Examiners, member and president 1913-1921
Iowa State Department of Health, commissioner 1933-1953, director Division of Gerontology, Heart and Chronic Diseases 1953-present
Iowa State Medical Society, president 1908, life member
Iowa Tuberculosis and Health Association, charter member 1915, president 1917-1918, honorary vice-president 1918-1925
Johnson County Medical Society (Iowa City), president 1902
Middle State Public Health Association, president 1950-1951
National Board of Medical Examiners, member 1916-1946, president 1928-1930
New York Academy of Sciences, member
Phi Beta Kappa Society, honorary member (Drake University), president of Des Moines association 1941-present
Polk County Medical Society (Des Moines), president 1911
Royal Sanitary Institute of Great Britain, honorary fellow 1954
Royal Society of Physicians of Edinburgh, honorary membership 1921
State University of Iowa, professor of pathology and bacteriology 1893-1903, professor of medicine 1903-1910, professor emeritus of medicine 1946
Veterans Administration Hospital, Des Moines, senior consultant in internal medicine and member of dean's committee 1946-present
World Medical Association, United States Division, member (founders' group)

HONORS GIVEN TO DR. BIERRING

Arthur T. McCormick Award, 1950, for 25 years in public health work
American Medical Association Distinguished Service Medal, 1956

AWARDS NAMED FOR DR. BIERRING

Dr. Bierring Award of the Iowa Society for Mental Hygiene, 1950
Bierring Award in Bacteriology, State University of Iowa College of Medicine, 1954
Walter L. Bierring Award, Iowa Tuberculosis and Health Association, 1955
Walter L. Bierring Lecture, established by the Federation of State Medical Boards of the United States, to be presented annually during the Congress of Medical Education and Licensure, AMA.

A Selected

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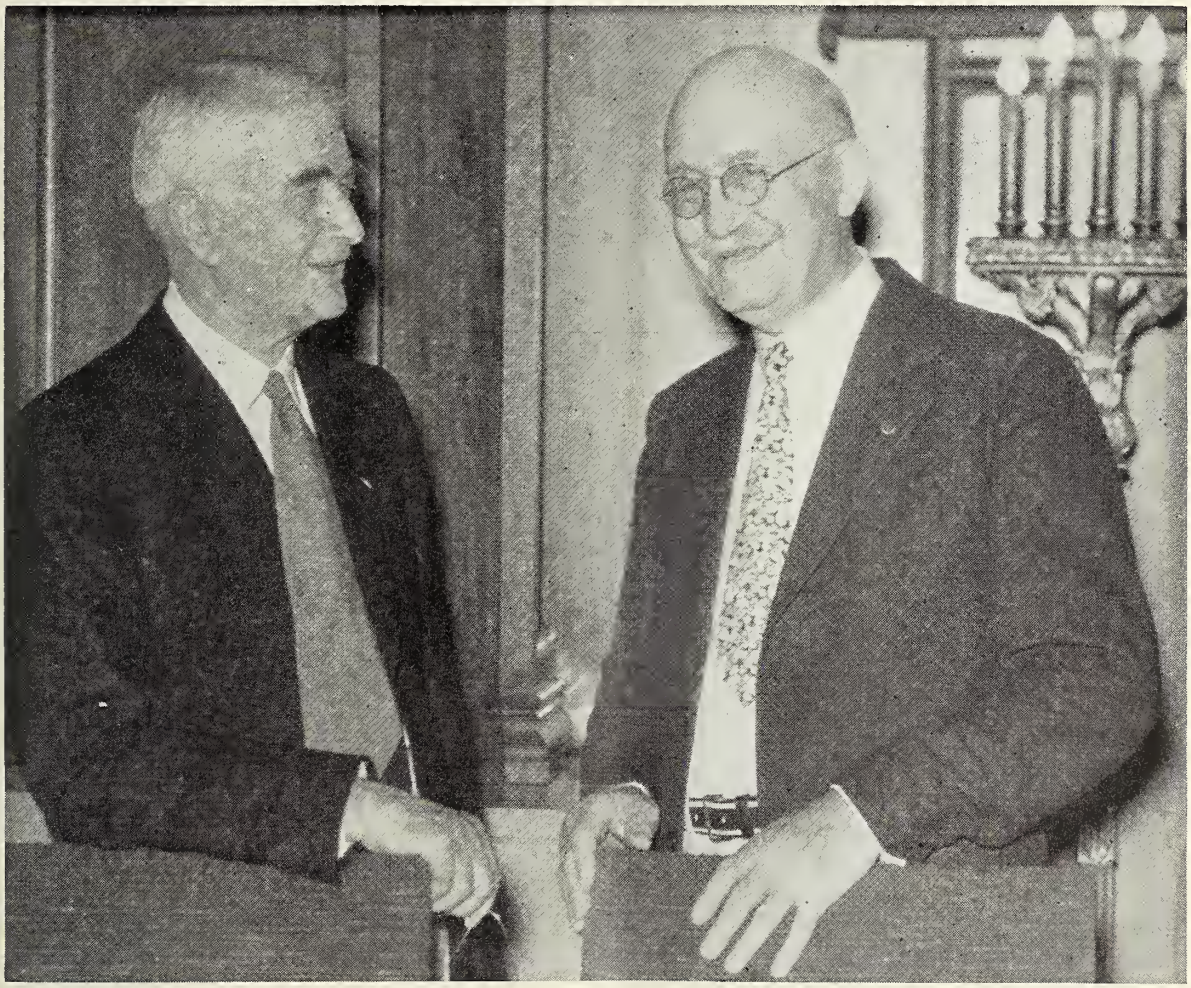
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Recollections of Walter Lawrence Bierring, M.D.

DANIEL J. GLOMSET, M.D.

SANTA BARBARA, CALIFORNIA

When I came to Des Moines in 1911, the only Iowa physician I had heard about was Walter Lawrence Bierring. During the decades that have passed since then, I have become intimately acquainted with Walter and have discovered but one flaw in his character, a flaw which I ardently wish were a part of my own make-up: He is too kind and too generous to his friends!

So far as I know, he has no enemies. When Bierring was "fixing" to run for the presidency of the AMA, Dr. Fred Moore thought it would help if we showed what his home folks and friends thought of him. Hence, a "swell" party was arranged for him at the Des Moines Club. For that occasion, Carlyle of the REGISTER drew a cartoon representing Bierring as a giant sequoia (Figure 1). Dr. Bierring is a giant among medical men in the United States, and the Medical Library Club is honoring itself as much as him by compiling a Festschrift in his honor.

It occurred to me that some of my recollections of him might constitute my contribution. The anecdotes that I shall tell will, I hope, lead readers to be inspired by Walter L. Bierring's deeds, as I have been. Since moving from Des Moines to California, I have become more familiar with sequoias than I used to be. Those magnificent trees show scars from storms, lightning and forest fires, but they have survived all of them. Bierring, too, has had many trials and tribulations; yet he is still a giant among us.

Walter received his first practical education where so many others of our country's giants got theirs—selling papers on the streets. Later, he decided to secure a business education, and enrolled in a business college in Davenport. During the penmanship, the "professor" decided that the school needed Bierring's help, and made him a penmanship instructor. (I wonder how many hundreds of persons have experienced the same delight that I have had in looking at his signature.)

In his student years at the S.U.I. medical school, the faculty soon discovered that beautiful penmanship was not the only talent Bierring possessed. When he graduated from the school, he was immediately appointed professor of bacteriology and pathology at the University and given a chance to prepare himself for his task by a study-trip abroad.

Bacteriology was the new, rich scientific vein that Pasteur and Koch had just opened. Although Bierring has great ability at keeping his ego submerged, he simply cannot do so when he talks about the Pasteur Institute in Paris and about his bringing to Iowa its first diphtheria antitoxin. And who is there who will blame him for showing some pride in that achievement?

Back in Iowa City, he was soon appointed professor of medicine. At that time the first bolt of lightning struck him. A tumor was discovered in his right leg, and when it had been diagnosed as an epithelioma with lymph node metastasis, the leg was amputated. The only remaining evidence of that bolt is the wooden leg.

When I first met him, he had resigned from his position at the State University and was residing in Des Moines. He enjoyed a lucrative consultation practice, was professor of medicine at the Drake medical school, and was able to navigate the hilly and often slippery streets of Des Moines



Figure 1. Arbor magnificus var. Bierring.



Figure 2. Dr. Bierring at the controls of the electric automobile that his friends referred to as "Bierring's perambulator."

in the electric car that Dr. Lawrence Kelley had nicknamed "Bierring's perambulator."

By 1910, the Carnegie Foundation had published Abraham Flexner's report on American medical schools. The effect of that factual document has always reminded me of the phenomenon I often observed as a lad. When my curiosity made me tilt up flat stones which I found on the beach, I often saw a herd of black bugs. They became wild when the light was let in, and when I returned to the up-tilted stones a few hours later, all the black bugs were gone. That was what happened to our sub-standard medical schools after the publication of the Flexner report. Flexner had divided all of the medical schools he had inspected into three classes. The most numerous group, Class III, consisted of colleges bearing no resemblance to institutions of learning. In Class II, which also was crowded, were institutions which possessed *some* of the essential qualities of a medical school. Class I contained those having the minimum requirements of a real medical college.

Thanks to the energetic fund-raising activities of the Drake alumni and the citizens of Des Moines, the Drake medical school was equipped with good laboratories. Hence, it was put into Class I. But the faculty and the trustees of the school were well aware that unless the institution obtained substantial additions to its funds, it was doomed. When further support was not forthcoming, the school, like many other medical colleges, gave up the ghost.

The folding-up of the Drake medical school did not seem to disturb Dr. Bierring. *His first and only medical love was and is the improvement of medical education, medical politics and medical talent.* There was much work to be done in 1913; there is much that remains to be done now; and certainly Walter L. Bierring has done and is doing more than his share of it!

Soon after the "baron" surgeons established the American College of Surgeons, too much for the purpose of preening themselves, like-minded physicians established the American College of Physicians. Bierring, who was more farsighted than most of his colleagues, took an active part in the formation of the latter of those organizations, and was one of the men who have made both of those colleges into institutions of which medical men of the U.S.A. have every right to be proud. Associations of similar type have since been formed by every specialty, and there even is a virile Academy of General Practice!

Perhaps Dr. George Simmons, former editor of J.A.M.A., surpassed even Dr. Bierring in seeing clearly into the future. He saw to it that various AMA councils were appointed, one of which was the Council of Medicine Education. Though it was rather inactive for a number of years, it has since played a very important role in the advancement of Medicine. Prior to my graduation all that one had to have in order to become a specialist in any phase of Medicine was intestinal fortitude, and there never was any lack of that. After 1910, the medical leaders decided to do something to remedy the situation. Under the aegis of the AMA councils, boards were formed. I believe that the Board of Surgery and the Board of Internal Medicine were the first to come into being. Each board consisted of members from the AMA council and members from the specialty involved. The members from the specialty were of the type who were eligible for membership in the tried and true American Association of Surgeons, the American Association of Physicians, the American Association of Bacteriology and Pathology, etc.

For decades, Bierring played a prominent role on the Board of Internal Medicine. He was chairman at the time the founding members were selected, and it was at that meeting when Dr. Ernest Irons teased him about the "flaw in his character" to which I have alluded. "Dr. Bierring," said Irons, "you want all the physicians in Des Moines to be certified as internists!" I am sure that I would not have received my certificate if I had had to pass the rigid examination that my son had to pass years later. I am equally sure that a smaller percentage of the men whom I attempted to instruct in internal medicine would have passed their board examinations, had it not been for the staunch help that Bierring gave me.

While Walter L. Bierring was working hard on

the Board of Internal Medicine, he had become Commissioner of Health for the State of Iowa. As administrator, he transformed the obsolete, politics-ridden Department of Health on Capitol Hill into a modern, streamlined department of which every Iowan has a right to be proud. The deeds performed by Dr. Walter Bierring for the advancement of Medicine are more than enough to satisfy any first-class American doctor. But Dr. Bierring has done more than that!

Shortly before I entered upon my medical studies, an honorary medical fraternity, Alpha Omega Alpha, had been established in the best medical schools. Soon after the publication of Abraham Flexner's report on medical colleges, the "sun" which had driven our "black bug" medical schools out of existence also stimulated the remaining first-class medical schools to further progress. This situation led Dr. Bierring, as spokesman for Alpha Omega Alpha fraternity, to cross and recross the United States many times in order to establish chapters in all eligible medical schools. I have often seen him return from those strenuous tours haggard and tired, with his good leg swollen. Nevertheless, he continued the work for decades, and is still going strong.

That is why all his friends heartily second the words which the cartoonist put into his mouth (Figure 3). When he looks at his emptying hour glass, Dr. Bierring smilingly pushes it toward Father Time with the instructions: "Fill 'er up again, boy!"



Figure 3. Dr. Bierring: "Fill 'er up again, boy!"

The Pilot of Iowa's Public Health

FRED STERNAGEL, M.D.

WEST DES MOINES

NATHAN HALE HAS BEEN immortalized in American history for his courage and service to the nation, but especially for his remark as he faced execution, "I only regret that I have but one life to give for my country." Dr. Walter L. Bierring need have no such regret. He has already given his country several lifetimes, as we are accustomed to reckon them, and he is continuing his distinguished service and remarkable contribution to Medicine, to public health and to human welfare.

The simple recounting of all Dr. Bierring's achievements would require far more space than has been allotted me, and an attempt to discuss just one phase of his remarkable career—his work in the field of public health—presents a real problem. How can one write so little about someone who has done so much?

Mentor was the friend to whom Odysseus gave charge of his household when he left for Troy. Though Dr. Bierring's career has embraced many interests within the field of Medicine, I like to regard him as our mentor in the special branch which we call public health.

PIONEER WORK IN BACTERIOLOGY AND EPIDEMIOLOGY

He entered the State University of Iowa, at Iowa City, as a medical student in September, 1889, and within a short time he seemed destined, according to all accounts, for the life of a teacher and leader in scientific medicine. After only six months, he became assistant demonstrator in anatomy; and during his second year in medical school he was privileged to learn the fundamentals of the newest of the new fields, bactoriology, from Dr. Thomas H. MacBride, professor of botany, who was the first man at S.U.I. to prepare pure cultures of yeasts and certain saprophytic bacteria. During his senior year, he served as student intern in Mercy Hospital, Iowa City, and assisted in preparations for medical and surgical clinics.

In the spring of his senior year, he was asked by the dean of the medical faculty to arrange for two years of postgraduate study in Europe in preparation for appointment to the chair of bacteriology and pathology at the S.U.I. medical school. He departed for Europe on March 22, 1892, less than two weeks after his graduation in Medicine,

and one month later was informed by the dean that he had been appointed professor of pathology and bacteriology, effective October 1, 1893. Thus, his period of graduate study had to be shortened by six months.

By reason of his knowledge of the German language, Dr. Bierring was able to obtain special opportunities for the study of pathology, bacteriology and clinical medicine at the leading continental medical centers, particularly in Vienna. In the Allgemeine Krankenhaus, a public and teaching hospital of 3,000 beds, there were 5,000 deaths per year, and nearly all of them came to autopsy. In the same institution, 10,000 births occurred annually. Opportunities for the study of disease at the bedside were unequalled. Dr. Bierring was fortunate in being introduced to the eminent surgeon and professor Theodor Billroth, the father of visceral surgery and a well known authority on surgical pathology and wound infection. At the University of Heidelberg, he spent a semester almost entirely under the tutelage of Professor Ernst, a former assistant to professor Robert Koch in Berlin, and the subject, of course was bacteriology.

Dr. Bierring returned to Iowa City in the fall of 1893, and conducted the first formal course in pathology and bacteriology there, establishing laboratories for both. Immediately after the close of the term—about April 1, 1894, he again sailed for Europe to enter the Pasteur Institute in Paris for a six-months period of study. There, he came under the inspiration of the great master Louis Pasteur and his associates Élie Metchnikoff, Émile Roux and Andre Borrell, who were to have a profound influence upon his future career.

During his studies at the Pasteur Institute in 1894, Dr. Bierring acquired the technic of preparing anti-diphtheria serum on a large scale, though the immunization of horses, and upon his return to Iowa City, he prepared diphtheria antitoxin so promptly that it was ready for distribution to physicians in the spring of 1895. He reported upon the method of its preparation and the results achieved through its use in a paper that he presented at the meeting of the Iowa State Medical Society at Creston in April, 1895. "The development of the modern treatment of diphtheria," he said, "is but the result of the progress of our knowledge of the disease and its etiology. The time is no doubt fresh in the memory of many a colleague when diphtheria was one of the most vague and indefinite of diseases, when a positive diagnosis was an impossibility, and uncertain therapy wandered from one remedy to another with no degree of reliability. . . . Compare this with the status of today, when we have a disease clearly defined, an etiology definitely established, with a ready means of recognition, and a therapy certainly more definite and scientific."

All of this progress to which Dr. Bierring referred had taken place within ten years, and in the amazing developments that were to follow, he was equally in the vanguard of the army marshalled to combat disease, to enforce sanitation and to raise the standards of medical practice.



A photograph taken of Dr. Bierring on March 9, 1892, following his graduation from medical school at the State University of Iowa.

Developments came rapidly as a new era was ushered in by antibiotic and chemical therapies. It is difficult to imagine that there ever again will be a period of such rapid progress in Medicine, and this Iowan was not only an observer but a contributor in this advancement. A distinguished ancestor of his, Vitus Jonassen Bering discovered and explored the arctic sea that now bears his name. Dr. Bierring has been no less an explorer, and his discoveries and innovations in the realm of preventive medicine and public health have done much to advance this branch of Medicine.

In the spring of 1895, after the close of the regular academic year at S.U.I., he instituted a five-weeks "Pasteur Course in Practical Bacteriology," the first formal graduate offering of the medical school there. It became very popular, and he repeated it in six subsequent years, though the series was interrupted by the fire that destroyed the Medical Building in March, 1901. During later visits to Europe, in 1896 and 1901, he studied methods of teaching both pathology and clinical medicine in London, Leipsig, Munich, Prague, Vienna and Paris.

Dr. Bierring recognized the need for making the S.U.I. facilities in bacteriology available to prac-

ticing physicians, and urged the establishment of a bacteriologic laboratory in connection with the State Board of Health. This was accomplished by legislative action in 1903. Medical diagnostic outfits for the culture of diphtheria, Widal tests for typhoid and vials for the submission of sputum samples for the diagnosis of tuberculosis were made available and proved to be of great service to the physicians of Iowa. The services were subsequently broadened, and what is now known as the State Hygenic Laboratory became one of the most important divisions of the State Department of Health.

In 1903, after completing 10 years as professor of pathology and bacteriology, Dr. Bierring was appointed to the chair of the theory and practice of Medicine at S.U.I., and in 1910 a turn of events brought a change of his residence to Des Moines, where he became head and professor in the Department of Internal Medicine at the Drake University medical school. Three years later, when it became necessary to merge the Drake medical school with the College of Medicine at S.U.I., he decided to remain in Des Moines and to carry on a consultation practice in internal medicine.

PUBLIC HEALTH ADMINISTRATION

With the reorganization of the Iowa State Board of Health and Medical Examiners in 1931, Dr. Bierring was appointed to its chairmanship by Governor George W. Clarke, and he held that position for eight years. During that period, new bureaus were established in vital statistics, sanitary engineering and preventable diseases, and a public health nurse was employed for the first time.

In 1913, the Federation of State Medical Boards of the United States was organized, and the Iowa board became a charter member. In 1915, Dr. Bierring was named secretary-treasurer of the organization and editor of its publication, the FEDERATION BULLETIN. He has held both of those responsibilities continuously ever since. His interest in the problems of medical licensure began at that time, and he has continued to be concerned about keeping licensure requirements abreast of the constant advances in medical education.

From 1916 until 1946, he was a member of the National Board of Medical Examiners, serving as a member of its executive committee during most of that time, and as its president from 1928 to 1930. His particular concerns had to do with examinations in pharmacology and internal medicine and with the promoting of close relations with state boards of examiners.

In 1919, Newton D. Baker, President Wilson's Secretary of War, appointed Dr. Bierring to a place on a commission to study medical education and qualifications for practice in Scotland, England and France preparatory to the establishment of reciprocal relations with the United States. The other members were Colonels Victor C. Vaughn and Louis A. LaGarde, of the Army Medical Corps. The commission visited medical schools and examining bodies abroad during the summer of 1919, and when a similar commission from England, Scotland and France came to this country in the spring of 1920, Dr. Bierring and the other members of the National Board acted as their hosts. As a result, satisfactory reciprocal relations were worked out with the Conjoint Examining Board of England and the Triple Examining Board of Scotland, but though a better understanding was accomplished with France, no reciprocity was concluded at that time. For this service, Dr. Bierring was made an honorary member of the Royal College of Physicians of Edinburgh.

Although actively engaged in a consultant's practice in internal medicine, Dr. Bierring continued his interest in preventive medicine as related to public health, including special studies in poliomyelitis, typhoid fever, influenza, pneumonia, undulant fever (brucellosis) and subacute bacterial endocarditis.

The year 1933 was an eventful one for Dr. Bierring. In June, he was named president-elect of the AMA, and on July 1, he became state commissioner of health, thus beginning 20 years as head of public health activities in Iowa. Though of a different political faith from Dr. Bierring, Governor Clyde L. Herring urged him to assume such a serious responsibility in spite of the fact that the doctor had reached 65 years of age, a time when most men are ready for retirement.

During his 20 years as commissioner, he was able to accomplish distinct improvements in personnel and to extend the benefits of modern public health service to the people of the state. A merit system was established, and all directors and assistants were given an opportunity to obtain special training leading to the degree of master of public health in the approved schools at the Universities of Minnesota and Michigan, and at Harvard and Johns Hopkins.

In addition to enlarging existing divisions of the State Health Department, such as those of preventable diseases, vital statistics, public health engineering, public health nursing, maternal and child health, and tuberculosis control, he was instrumental in the establishment of new divisions in venereal disease control, health education, local health services, cancer, nutrition, hospital services and heart disease control. Some index to the extent of those changes can be found in the fact that the personnel increased from 28 in 1933 to 240 in 1953. All of the added individuals are engaged in useful and indeed vital tasks.

The efforts of Dr. Bierring and his associates were especially effective in obtaining most desirable quarters for the Department in the new State Office Building, where it occupies the entire third floor.

The most significant legislation enacted during

his long term as commissioner consisted of two acts concerned with the control of venereal disease. One of them requires prenatal Wasserman tests of women in pregnancy, a measure that has been the means of reducing the incidence of congenital syphilis almost to a minimum. The other requires premarital tests, and is a further means for controlling the disease. Other significant changes included the installation of modern sewage disposal plants in all of the larger cities in Iowa and the starting of an extensive hospital-building program with funds made available by the federal government under the Hill-Burton Act.

By reason of his wide experience in clinical medicine and special training in preventive medicine, he became very highly interested in finding solutions to problems of stream pollution, impaired nutrition and unsatisfactory housing. And as a result of his prominence in American Medicine, he extended the influence of the Iowa Department of Health beyond the borders of the state.

In an address that he delivered at a meeting of the Illinois State Medical Society in April, 1934, he stated: "Heart disease is . . . becoming an important public health program. We have been accustomed to speak of the great increase in the mortality from heart disease, disregarding the age periods at which these increases have occurred. By analyzing the mortality rates such as those prepared by the American Heart Association, particularly according to age periods, it is seen that almost the entire increase in heart disease mortality has occurred at age 40 or over. The death rates up to age 30 are low. In charts showing percentage changes, the fact is noted that under five years of age there has been an actual decline of the heart disease rate of 34 per cent in the last 10 years. At ages 5-9, there has been a decrease of 27 per cent. Even at ages 10-19 a 23.4 per cent decline is apparent. These declines seem to reflect the intensified health work with infants, preschool and school children which has been carried out in the last 10 years."

In connection with his many activities in the field of public health, Dr. Bierring maintained his interest in medical education and particularly in the standardization of specialists. As a regent of the American College of Physicians, he was instrumental in the organization of the American Board of Internal Medicine in 1936. He served as its chairman for the first three years and holds its Certificate No. 1. In 1948, he had a large part in the incorporating of the American Board of Preventive Medicine and Public Health; he served as its chairman for the first eight years; and he also holds its Certificate No. 1. In 1950, the name of the latter board was changed to the American Board of Preventive Medicine, Inc., and in addition to public health two more specialties have been affiliated with it: aviation medicine in 1953 and occupational medicine in 1955. Dr. Bierring retired from the chairmanship of the American Board of Preventive Medicine, Inc., in 1956, and was then named its honorary chairman, with all of the privileges of membership.



Dr. Bierring is shown talking with Dr. Dwight H. Murray, of Napa, California, president of the AMA, at Chicago in June, 1956, on the occasion of his receiving an AMA Distinguished Service Award.

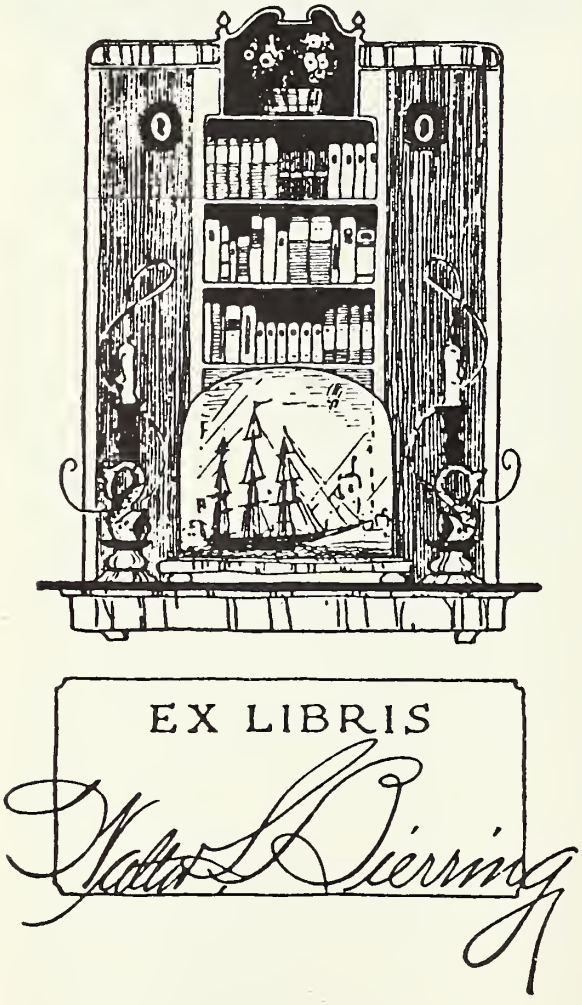
Dr. Bierring was one of the charter members of the Association of State and Territorial Health Officers, which holds annual conferences with the surgeon general of U.S.P.H.S. and is largely concerned with matters of budget and programs for the individual states. He was one of the organizers of the Middle States Public Health Association, in Des Moines in 1950, and served as its president during the first year. He was a charter member of the Iowa Tuberculosis Association when it was organized in 1915, and was its president from 1916 to 1918. In 1926, he assisted in reorganizing the Iowa Public Health Association. In 1938, he also helped to organize the Iowa Mental Hygiene Society, and served the first five years as its president.

In 1933, he was named a fellow of the American Public Health Association. He served for several years as a member of its Committee on Professional Education; for 20 years he was a member of its governing council; and he was its first vice-president in 1954.

He was an active member of the Conference of State and Provincial Health Authorities of North America, and served for six years as chairman of its Committee on Public Health Education. In 1947, at a meeting held at Chateau Frontenac, in Quebec, near the end of his two years as president of the organization, he concluded his address with

the following statement: "Public health and preventive medicine are the newest branches in Medicine, and in spite of much misunderstanding are rapidly reaching the front line of social progress."

Near the close of the twentieth year of his service as commissioner of health, Dr. Bierring expressed the desire to be relieved of the arduous administrative duties that his job entailed, and thus to bring to a close 60 years of medical service —20 years as a teacher of medicine (half in bacteriology and pathology, and half in internal medicine), 20 years of consultative practice in internal medicine and 20 years in public health administration. As his successor, Governor William Beardsley appointed Dr. Edmund G. Zimmerer, who had served most efficiently as director of the District Health Service in the State Department of Health, and afterwards for 10 years as director of the Department's Division of Cancer Control. He assumed the duties of commissioner on July 1, 1953. Dr. Zimmerer urged Dr. Bierring to continue with the Department as director of the reorganized Division of Gerontology, Heart and Chronic Diseases. Dr. Bierring consented to do so on a temporary basis, but has found the work so interesting that he has continued to hold that post up to this time. He has brought to this new and important field of communal and public health a wealth of knowledge, experience and training, as well as the prestige of a lifetime's distinguished service in the field of Medicine.



HONORS AND AWARDS

Of the many honors and awards that have been conferred on Dr. Bierring, the following pertain to the field of public health:

Life member of the American Public Health Association

Life member of the Conference of State and Territorial Health Authorities of North America

Honorary fellow of the Royal Sanitary Institute of Great Britain

Honorary member of the Canadian Public Health Association

Life member of the Iowa Public Health Association

Arthur T. McCormick Award for 25 years of service in public health

Bierring Award in Bacteriology, State University of Iowa, 1954 (60 years after his teaching the first formal course in bacteriology there)

Bierring Award in Tuberculosis, 1955, Iowa Tuberculosis and Health Association.

Dr. Bierring's life has been so closely identified with the development of public health work in the State of Iowa that he will always be thought of as personifying it. The history of public health here began, it is true, a bit before his time—in 1880, when the General Assembly of the State of Iowa created a State Board of Health. The first president of the Board, Dr. W. S. Robertson, said when he assumed office, "Let it be our endeavor by wise and timely suggestions so to mold popular opinion and so to instruct the masses in the elements of sanitary science that all may recognize the wisdom in the enactment of the health law which shall give them purer water, better drainage, better ventilated homes, more healthy food and longer life—all to be desired."

These ideas and ideals were implemented by the work and leadership of Dr. Bierring, so that a new plateau was reached in the history of public health. It is a plateau upon which future leaders may build solidly and with confidence. The citation accompanying the Distinguished Service Medal awarded to Dr. Bierring by the AMA in 1956, as reported in the issue of JAMA for June 23 of that year, is a fitting eulogy with which to conclude this panegyric to the Pilot of Iowa's Public Health: "Dr. Bierring was chosen for the honor by the American Medical Association in recognition of his achievements in public health and for his experience in medical examining board work."

Walter Lawrence Bierring and the Specialty of Aviation Medicine

PHILIP G. KEIL, LT. COL., USAF (MC)

SAN ANTONIO, TEXAS

THE INDIVIDUAL TO whom this issue of the JOURNAL is dedicated was 35 years of age when the Wright brothers first successfully flew a heavier-than-air craft at Kitty Hawk on December 17, 1903. Fifty years later, he was perhaps more instrumental and influential than any other person in achieving the recognition of aviation medicine as a specialty. This fact may astonish his scores of close friends in the State of Iowa, but it is quite well recognized nationally and internationally.

EARLY HISTORY OF AVIATION MEDICINE

We may assume that our honoree was passingly cognizant of the importance of the Wright brothers' achievement, but Iowa was a long way from North Carolina in those days.

Three years and seven months after the first flight, the Aeronautical Division of the office of the Chief Signal Officer of the Army was created, August 1, 1907. Three individuals—a captain, a corporal and a first-class private—were charged with the handling of "all matters pertaining to military ballooning, air machines and all kindred subjects."[1] Such a mission seems ridiculous nowadays, in the era of "century-series" aircraft (F-100 to F-107) and of commercial jet air travel. The first identifiable beginning of aviation medicine took place in February, 1912, when the Secretary of War directed the Surgeon General of the Army to prepare a special preliminary physical examination for candidates who were to receive instruction in flying.[2]

The greatest early impetus to aviation medicine was the creation of the Air Service Medical Research Laboratory, at Hazelhurst Field, Mineola, Long Island. The plans were laid in 1917, and the laboratory opened in 1918, under the general direction of the acknowledged father of aviation medicine in America, Lt. Col. Theodore C. Lyster.

The British had already become quite aware that the standards for selection of aviators must be high. Through the establishment of rigid physical requirements, fatalities due to physical defects were reduced from 60 per cent the first year of the war to 20 per cent during the second and 12 per cent during the third year.[3]

Dr. Bierring finds considerable delight in recalling an incident that occurred during the formal hearings that were conducted prior to the acceptance of aviation medicine as a separate specialty affiliated with the American Board of Preventive Medicine. One of the representatives of the Air Force Medical Service opened his remarks by producing a July, 1920, copy of JAMA in which an article was entitled, "The Flight Surgeon—A New Specialist in Medicine."[4] But an accident a year after its publication made that article no more than a false start at giving status to a new branch of Medicine. The Research Laboratory at Hazelhurst burned to the ground, and aviation medicine suffered a severe setback.

Most of the leaders and key people in aviation medicine today were young flight surgeons in the tenuous thirties, when the concept of military air power was being debated. They were then, or have since become, close friends of Walter Bierring, who, by 1933, had completed two decades in academic medicine and two decades in a flourishing consulting practice, and was about to embark upon a new career as Commissioner of Health of the State of Iowa. He had just become president-elect of the American Medical Association. No one could have known that his interest in preventive medicine and public health would have such an impact upon a field of medicine about which so few had thought so little up to that time.

As recently as 1939, a serious crisis occurred that threatened the very existence of the flight surgeon. The late commanding general of the Army Air Corps, General of the Army Henry H. ("Hap") Arnold, was making a flight to the Philippines. During a stop at Hawaii, his pilots were declared medically unfit to continue the flight. General Arnold ordered the flight to proceed. Upon returning to Washington, he directed that a board of officers be appointed to study the "whole flight surgeon problem in the Air Corps,"[5] and to "render a report to him justifying the existence of flight surgeons."[6] That is probably the most recent "low water mark" of aviation medicine.

A FEW AEROMEDICAL PROBLEMS

Most of us remember World War II and the part which aviation played in its culmination. The concepts of strategic and tactical air power developed. The Japanese submitted as a direct result of air power alone.

Speeds increased, altitudes increased and problems of "space medicine" were added to the immediate concerns of researchers in aviation medi-

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cine. It is common knowledge that manned aircraft have flown considerably in excess of 100,000 feet from the ground and at speeds approximating Mach 3 (three times the speed of sound) or more.

Consider the human element. Man is becoming obsolescent after little more than 50 years of powered flight. What has been done, and what is being done about it?

One of the first requirements that was recognized early in World War I was the need for oxygen on flights at altitudes above 10,000-15,000 feet. At 18,000 feet, the atmosphere thins to one-half, and at approximately 37,000 feet, the air is only one-sixth as dense as at sea level. Man can maintain his arterial oxygen saturation at 95 per cent (normal) by breathing 100 per cent oxygen to a maximum altitude of 37,000 or 38,000 feet. Above that level, oxygen must be forced into his lungs by pressure, creating a resistance against exhalation and forcing oxygen into his blood stream across the alveolar barrier. By this means, man can sustain himself to 45,000 feet, and briefly to 47,000 or so feet. Breathing at an actual or simulated altitude of 45,000 feet is a full-time job.

To shove our obsolescent human mechanism higher still, it was necessary to create an artificial environment. The cabin of the aircraft was pressurized by pumping-in rarified air. Thus, an aircraft flying at an actual altitude of 20,000 feet can provide a comfortable simulated cabin altitude of 7,000 or 8,000 feet. Most of us have had the delightful experience of hearing a captain or stewardess on a commercial airliner announce: "Welcome aboard. We shall be flying at 18,000 feet, and will reach our destination in two hours and 20 minutes. Weather at destination is clear, and the temperature is 72 degrees. We hope you enjoy your flight." We wouldn't if the cabin were unpressurized!

Consider a man flying at 60,000 feet, with a cabin altitude of 30,000 feet. If, for some reason, he suddenly lost his pressurization and "exploded" to his actual altitude, his useful consciousness would last for only a few seconds, and death would ensue within a minute or so. Thus, it was mandatory to create another artificial atmosphere around the man—a pressure suit only an inch or two away from his body, completely encompassing it and automatically operational if needed. Only by such means could he be protected against mechanical failure of his cabin pressurization.

Another problem is that of providing a means of escape from aircraft flying at extreme altitudes. The parachute, though still a fine investment, is no longer enough. Higher speeds, higher altitudes, lack of oxygen and extreme cold called for something more. Unassisted bail-out from aircraft flying more than, let us say, 500 m.p.h. is virtually impossible. Ejection seats were devised, first with an upward trajectory and more recently with a downward course so as to avoid any possible lethal contact with the airframe.

The ultimate answer to the problem will probably be automatic separation of the cabin or cockpit from the remainder of the aircraft. The crew members will then float down in an enclosed space, supported by a large automatically opened parachute, and will be protected regardless of whether the landing is on terrain or on water.

The aeromedical aspects of visual problems at supersonic speeds have been worked out by Brig. Gen. Victor A. Byrnes, now director of professional services in the office of the Surgeon General. If two planes approach each other on a collision course flying at 1,800 m.p.h., and 500 feet separate them, they will collide before either pilot has time to see the other. If 3,000 feet separate them, they will collide before either pilot can change his course. The ocular mechanism with which the human body is equipped provides visual perception which is less than instantaneous.[7] Following is a table of time lapses and distances traveled during a pilot's simple recognition of an object, when his plane is traveling at 1,800 m.p.h. When flying

	Seconds	*Feet Traveled*
Reaction time	.175	462
Eye movement	.050	132
Foveal perception	.070	185
Accommodation	.500	1,320
Recognition	.800	1,952

at 1,800 m.p.h., a pilot travels 6,336 feet while he glances as briefly as possible at his instrument panel.[8]

AVIATION MEDICINE GAINS RECOGNITION

It is difficult for those not constantly thinking about such problems to comprehend the changing picture of combined engineering and medical problems incident to present-day flying. The above represent only a few of them. Some of the others concern cosmic radiation, ultraviolet and atomic radiation, gravitational stresses, and the effects on other important organ systems, notably the cardiovascular, auditory and vestibular, gastrointestinal, etc.

These paragraphs have served to illustrate the need for a special type of doctor—one conversant with and specially trained in the unique facets of Medicine that have to do with flight.

Dr. Bierring was one of the first men to recognize the need for such physicians, and to listen sympathetically and understandingly to the Interim Board on Aviation Medicine and the Advisory Board for Medical Specialties. He was in a strategic position to do so, as chairman of the American Board of Preventive Medicine, and to be influential in the final decision. Working closely with him was Maj. Gen. Otis O. Benson, Jr., commandant of the School of Aviation Medicine and vice-chairman for aviation medicine of the American Board.

Dr. Bierring had served 20 years as Commissioner of Health when aviation medicine was finally recognized as a specialty, and identified as an

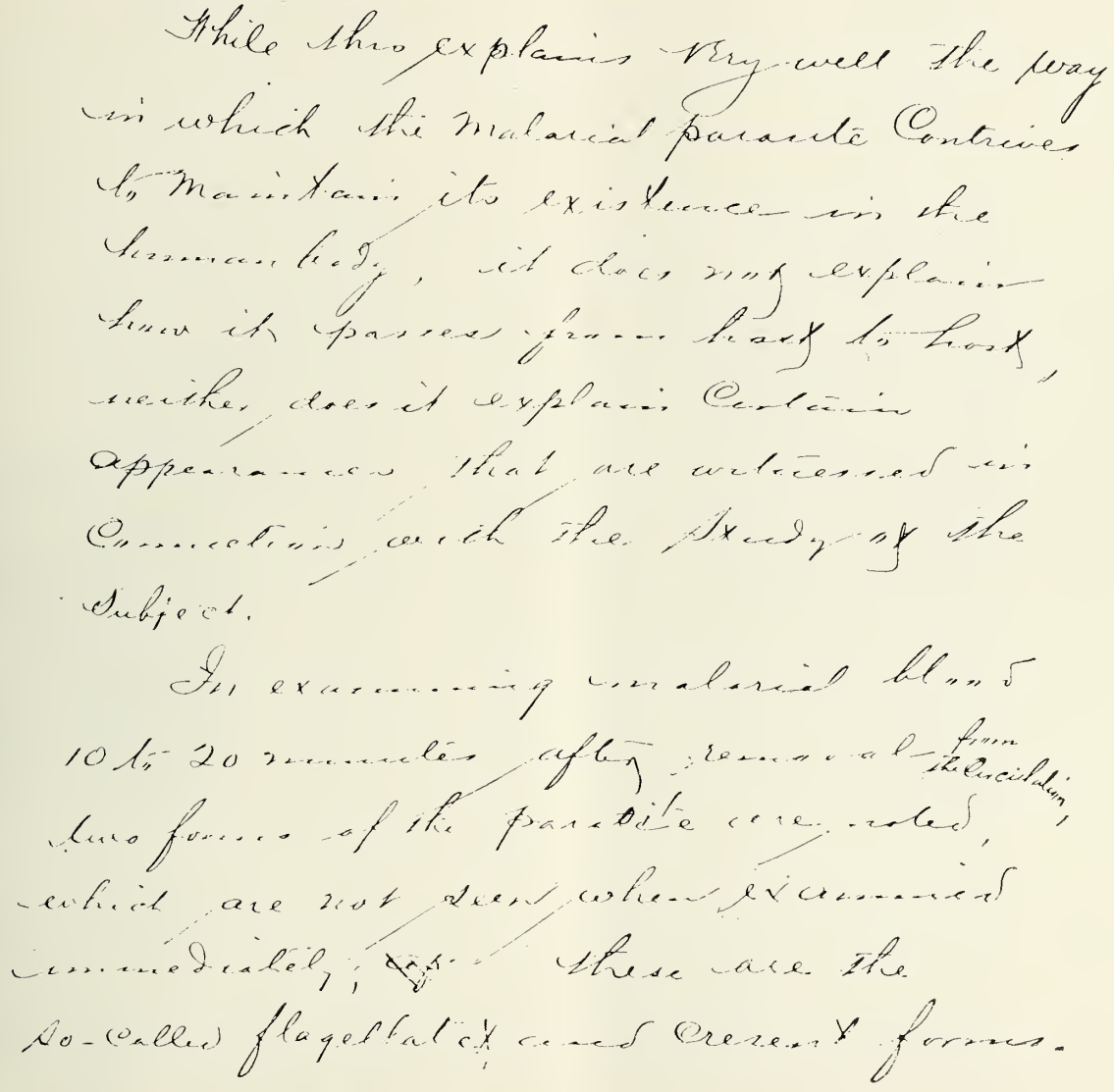
affiliate by the Board of Preventive Medicine. Founder members were selected during 1953 and 1954, and in March, 1955, the first examination for certification was held in conjunction with the annual meeting of the Aero Medical Association, in Washington, D. C.

A residency training program was developed, consisting of three didactic years and two practical years of study and training before eligibility for examination for certification. The physicians who have undergone those five rigorous and exacting years are dedicated to the principles and practice of aviation medicine, and they serve side-by-side with the flying crews and aeronautical engineers in the solution of ever new and seemingly-insoluble aeromedical problems.

No one is watching the progress of this newly recognized specialty with more pleasure, nor with a greater sense of accomplishment, than Walter L. Bierring. In his characteristically quiet and persuasive way, he was largely responsible for its being.

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While this explains very well the way in which the Malarial parasite Continues to maintain its existence in the human body, it does not explain how it passes from host to host, neither does it explain certain appearances that are witnessed in Connection with the Study of the Subject.

In examining malarial blood 10 to 20 minutes after removal from the Circulation two forms of the parasite are noted, which are not seen when examined immediately. These are the so-called flagellated and crescent forms.

This excerpt from the handwritten manuscript of a lecture which Dr. Bierring delivered to the Iowa Union Medical Society on "The Role of Insects in the Spread of Disease" illustrates his alertness in calling medical developments to the attention of his colleagues. On December 11, 1900, more than a year before the campaigns in which the Anopheles was exterminated in Cuba and in the Isthmus of Panama, he reported on its part in the spread of malaria.

Coming Meetings

In State

Sept. 22-24	**Annual Meeting of the Iowa Association of General Practitioners.** Savery Hotel, Des Moines

Out of State

August 1-3	**Current Concepts in Medicine.** U.C.L.A., Los Angeles
August 5-10	**International Symposium on Curare and Curarizing Substances.** University of Brazil, Rio de Janiero
August 5-16	**Cystoscopy.** Cook County Graduate School of Medicine, Chicago
August 7-9	**International Congress of the European Society of Haematologists.** Copenhagen, Denmark
August 7-9	**International Congress of the Biology of the Hair Follicle and the Growth of Hair.** London
August 11-17	**World Federation for Mental Health.** Copenhagen, Denmark
August 12-17	**Argentine Congress of Gastroenterology.** Salta, Argentina
August 12-15	**National Medical Association.** Hotel Hollenden, Cleveland
August 15-17	**Rocky Mountain Radiological Society.** Shirley-Savoy Hotel, Denver
August 19-30	**Electrocardiographic Interpretation.** Michael Reese Hospital, Chicago
August 19-30	**Surgical Technic.** Cook County Graduate School of Medicine, Chicago
August 21-24	**Reno Surgical Society Annual Meeting.** Riverside Hotel, Reno
August 22-24	**West Virginia State Medical Association.** The Greenbrier, White Sulphur Springs
August 26-28	**International Society for the Study of Biological Rhythms.** Semmering, Austria
August 27-30	**Biological Photographic Association.** Kahler Hotel, Rochester, Minnesota
Aug. 28-Sept. 3	**Congress of the International Society for Cell Biology.** St. Andrew's, Scotland
Aug. 29-31	**International Congress on Group Psychotherapy.** Zurich, Switzerland
Sept. 1-7	**International Congress of Psychiatry.** Zurich, Switzerland
Sept. 5-7	**Utah State Medical Association 62nd Annual Scientific Program.** Hotel Utah and University of Utah, Salt Lake City
Sept. 5-7	**American Association of Obstetrics and Gynecology.** The Homestead, Hot Springs, Virginia
Sept. 6-12	**International Symposium on Medicine and Social Hygiene.** Trieste, Italy
Sept. 8-12	**Twenty-second Annual Congress International College of Surgeons.** Palmer House, Chicago
Sept. 8-13	**American Congress of Physical Medicine and Rehabilitation.** Statler Hotel, Los Angeles
Sept. 9	**Treatment of Varicose Veins.** Cook County Graduate School of Medicine, Chicago
Sept. 9-11	**Prevention and Management of Athletic Injuries.** University of Colorado Medical Center, Denver
Sept. 9-13	**Hematology.** Cook County Graduate School of Medicine, Chicago
Sept. 9-13	**Radiation for Industrial Physicians and Lawyers.** University of Cincinnati, Cincinnati
Sept. 9-13	**Vaginal Approach to Pelvic Surgery.** Cook County Graduate School of Medicine, Chicago
Sept. 9-13	**Regional Anesthesia.** N.Y.U., N.Y.C.
Sept. 9-20	**Gastroscopy and Gastroenterology.** Cook County Graduate School of Medicine, Chicago
Sept. 9-20	**International Conference on Radio-Isotopes in Scientific Research.** Paris, France
Sept. 9-21	**Didactic Lectures in General Surgery.** N.Y.U., N.Y.C.
Sept. 12	**Psychiatry and Neurology.** U. of Nebraska Coll. of Med., Omaha
Sept. 12-14	**Annual Postgraduate Assembly.** St. John's Hospital, Santa Monica
Sept. 13-14	**International Congress of the International Union of the Medical Press.** London, England
Sept. 15-18	**Washington State Medical Association Annual Meeting.** Olympic Hotel, Seattle
Sept. 16-20	**Surgery of Colon & Rectum.** Cook County Graduate School of Medicine, Chicago
Sept. 16-20	**Histology of the Skin.** N.Y.U., N.Y.C.
Sept. 16-20	**Ocular Expressions of Systemic Disease.** N.Y.U., N.Y.C.
Sept. 16-21	**Congress of International Society of Orthopedic Surgery and Traumatology.** Barcelona, Spain
Sept. 16-21	**Congress of International Union of Railway Medical Services.** Paris, France
Sept. 16-21	**Internal Medicine.** University of California, San Francisco
Sept. 16-27	**Diagnostic X-Ray.** Cook County Graduate School of Medicine, Chicago
Sept. 16-27	**Surgical Technic.** Cook County Graduate School of Medicine, Chicago
Sept. 16-27	**Office and Operative Gynecology.** Cook County Graduate School of Medicine, Chicago
Sept. 16-27	**Pathologic Physiology of Internal Medicine.** N.Y.U., N.Y.C.
Sept. 16-Oct. 25	**Anatomy of Head, Neck and Thorax for Otolaryngologists.** N.Y.U., N.Y.C.
Sept. 16-Nov. 8	**Occupational Medicine.** New York University, New York City
Sept. 18-19	**Eleventh Annual Postgraduate Assembly.** San Diego County General Hospital, San Diego
Sept. 23-25	**Peripheral Vasular Disease.** Mayo Clinic, Rochester, Minn.
Sept. 23-Oct. 4	**General Review Course.** Cook County Graduate School of Medicine, Chicago
Sept. 23-Oct. 4	**General Surgery.** Cook County Graduate School of Medicine, Chicago
Sept. 23-Oct. 4	**Intensive Review of Internal Medicine.** Research Building, University of Southern California, Los Angeles
Sept. 24-26	**Pediatrics for Specialists.** University of Minneapolis Center for Continuation Study, Minnesota
Sept. 24-27	**Colorado State Medical Society Annual Session.** Shirley-Savoy Hotel, Denver
Sept. 25-27	**Annual Meeting of the Michigan State Medical Society.** Civic Auditorium and Hotel Pantlind, Grand Rapids
Sept. 25-27	**Mississippi Valley Medical Society.** Hotel Sheraton-Jefferson, St. Louis
Sept. 25-28	**Annual Meeting of the Nevada State Medical Association.** Las Vegas
Sept. 26-27	**Glaucoma.** University of California, San Francisco
Sept. 26-28	**Neuro-otolaryngology.** N.Y.U., N.Y.C.
Sept. 27	**Symposium on Sexual Problems.** Statler Hotel, Los Angeles
Sept. 27-28	**American Medical Writers' Association.** Sheraton-Jefferson Hotel, St. Louis
Sept. 29-Oct. 5	**World Medical Association.** Istanbul, Turkey
Sept. 29-Oct. 5	**International Congress of Military Medicine and Pharmacy.** Belgrade and Opatija, Yugoslavia
Sept. 30-Oct. 2	**Electrocardiography.** U. of Nebraska Coll. of Med., Omaha
Sept. 30-Oct. 3	**Annual Meeting of the American Fracture Association.** El Paso
Sept. 30-Oct. 3	**Thirty-fifth Annual Fall Clinical Conference, Kansas City Southwest Medical Society.** Municipal Auditorium, Kansas City, Missouri
Sept. 30-Oct. 3	**Interstate Postgraduate Medical Association Meeting.** Palmer House, Chicago
Sept. 30-Oct. 4	**Anesthesiology: Endotrachial and Related Methods.** N.Y.U., N.Y.C.
Sept. 30-Oct. 4	**Gynecologic Neoplasms.** N.Y.U., N.Y.C.
Sept. 30-Oct. 4	**Esophageal Surgery.** Cook County Graduate School of Medicine, Chicago
Sept. 30-Oct. 6	**Annual Assembly in Otolaryngology.** University of Illinois, Chicago
Sept. 30-Oct. 11	**General & Surgical Obstetrics.** Cook County Graduate School of Medicine, Chicago
Sept. 30-Oct. 11	**Surgical Anatomy and Clinical Surgery.** Cook County Graduate School of Medicine, Chicago

Scientific Articles

Polyvinyl Plastic Sponge as an Aid in Herniorrhaphy

With Special Reference to Ivalon "Boot Herniorrhaphy"

TOM D. THROCKMORTON, M.D., AND WILLIAM H. MYERLY, M.D.

DES MOINES

AS HERNIORRHAPHY has come more and more to be done by trained surgeons, the rate of recurrence has declined from the over-all 10 per cent of 15 years ago, and as the surgeons themselves have come to regard this procedure with interest rather than indifference, the recurrence rate has fallen to the apparently irreducible minimum of 1 to 2 per cent. The adherence to surgical principles, better suture materials, biologically inert implants and "custom tailored operations" have been the contributing factors. Hernias in which tissue deficiency is a major complication are no longer a bugaboo, for there are various types of relaxing incisions, flaps and implants. Polyvinyl plastic sponge has become available as a material from which patches or implants may be fashioned.

Polyvinyl plastic sponge, or "Ivalon sponge" is a wettable plastic material which seems biologically inert and into which tissue readily grows and infiltrates, turning the sponge into a mass of dense but pliable scar tissue. Ivalon sponge is usually cut into slices about 8 mm. thick. It is then compressed between steel plates as it is boiled or autoclaved to a final thickness of approximately 3 mm. The resultant material handles about like chamois skin, and holds the suture material very well. Although Ivalon is a "foreign body," its soft pliability and sterile whiteness do not seem to offend the finer sensibilities of the surgeon nearly so much as does the metallic, dull gray of a tantalum mesh implant. Also, it does not provide an x-ray shadow. The strength of Ivalon sponge, compressed about three times, is not comparable with that of tantalum mesh, but it is an entirely adequate substitute in most areas of tissue deficiency, and is superior for other uses.

OUR EARLY EXPERIENCE WITH IVALON HERNIORRHAPHY

We first used Ivalon sponge to repair a tissue deficiency in a patient during December, 1955. A young woman had been operated upon several years previously in another city because of a painful coccyx, and though it was removed, the pain was unrelieved. In addition, she had developed a herniation of the posterior rectal wall through a punched-out defect in her scar—an opening approximately 3 cm. in diameter. The edge of this defect was sharp and dense, and would not allow closure by any method with which we were familiar, including local flaps. Tantalum gauze seemed inadvisable, for it would lie in the gluteal cleft immediately behind the rectum, and actually there would only be her skin—and, presumably, her clothing—between it and the chair whenever she sat down. An Ivalon implant was sutured into the defect, and the patient has had an entirely satisfactory result. The enveloping of the implant by scar tissue could be followed by means of regular rectal examinations. It is parenthetically of interest that the patient's pain was completely relieved as a consequence of the excision of the scar, and that a portion of the removed material revealed a "benign cellular neurofibroma of the sacral area."

Since that time, we have used Ivalon sponge as an implant in hernias complicated by marked tissue deficiency on 15 occasions and with uniformly excellent results.

A triangular implant is sutured over the deficient floor of the inguinal canal between the internal and external oblique muscles, just as ham lies in a sandwich. The cord is brought through a slit in the superior border of the implant, and

laterally the material may be sutured to Cooper's ligament, to Poupart's ligament or to both. Several times, this material has been used to fill or reinforce large defects present in other abdominal areas with equally satisfactory results.

However, as long as man has testicles, he will be susceptible to hernial defects. A complete closure of the internal inguinal ring, with the spermatic cord passing through it, has been impossible. This little defect can defeat the most diligent surgeon. The "secret" of the internal inguinal ring lies in the following fact: The spermatic cord does not pass into the abdomen, but lies retroperitoneally. Thus, if it were but possible to place a barricade between the cord structures and the peritoneum, an indirect hernia could not recur. Polyvinyl plastic sponge is a material from which such a barricade may be fashioned.

BOOT HERNIORRHAPHY

Our only recurrences of inguinal hernia have been at the region of the internal inguinal ring, despite high ligation and fixation of the stump of the sac. These recurrences have taken place along the structures of the spermatic cord. It has seemed logical that if one could interpose this bulwark of sturdy material between the cord structures and the peritoneum in the region of the internal inguinal ring, the reformation of another peritoneal process would be impossible. Such a barricade, or implant, we have designated a "boot," for we think of it as resembling the old "tire boot" that was installed between the inner tube and a weakened area in the tire carcass. We first attempted this maneuver three or four years ago, using a small implant of tantalum mesh, but the semi-rigid edge of the mesh was found immediately to overlie the iliac blood vessels, and the procedure was abandoned. A small, gently compressed implant of Ivalon, from a purely physical standpoint, is suited ideally for such a situation, however. It is soft, it holds suture material well, tissue grows rapidly and unimpeded through its substance, and it quickly forms a scar-tissue barricade.

The Ivalon boot is actually used as follows. The peritoneal process of the hernia is closed with a purse-string or transfixion suture of chromic 0 catgut. The peritoneum is bluntly dissected from the retro-peritoneal cord structures, the iliac vessels and the vas defrens. One can pass his finger through the internal inguinal ring and use it as a dissector. One needs only a moment to develop the plane between the cord structures and the peritoneum. An implant of Ivalon sponge approximately 5 cm. on a side and 3 mm. thick is fashioned and then soaked in a dilute solution of antibiotic. (We have used penicillin-streptomycin, neomycin or achromycin.) The transfixing suture is then passed through the medial-superior border of the implant, and the stump of the hernial sac is "Kocherized" well medially and superiorly to the internal inguinal ring. This maneuver not only fixes the peritoneum well away from the internal inguinal ring, but also draws the Ivalon implant into the ring and interposes it between the peritoneum and the structures of the cord. The lateral margin of the "boot" is then tucked down over the iliac blood vessels.

When one looks through the internal inguinal ring, only the Ivalon implant can be seen, completely covering the peritoneum and seemingly making it impossible for a new hernial process to develop. The internal inguinal ring is then snugged up about the cord, by means of a few sutures in the transversalis fascia, and the herniorrhaphy is completed by whatever technics suit the surgeon's fancy. We usually use a modification of the Halsted herniorrhaphy, with a subcutaneous transplantation of the cord.

In huge scrotal or recurrent inguinal hernias, when the canal has lost its floor and its obliquity, and an orchidectomy would seem indicated, a *combination* of the Ivalon boot and the Ivalon patch gives a firm repair and allows the patient to keep his testicles and cord structures—for whatever they may be worth. We have carried out this combination operation eight times.

Polyvinyl plastic sponge makes an excellent *"caulking material."* Ivalon sponge is used in the closure of intracardiac defects, not only as a tissue substitute but also as a spongy material over which sutures may be tied, thus caulking or plugging the smaller defects between sutures. In the imbrication repair of huge ventral hernias, a similar type of defect may exist. The two fascial edges may be overlapped by three rows of sutures, but the peritoneum-to-fascia closure of the first row is rarely as satisfactory as the surgeon could wish. A strip of Ivalon sponge 1 cm. wide may be laid along this line of closure, and the second sutures may be tied over it. This prevents the sutures from cutting if they are under tension, and nicely caulks up the tiny defects between the stitches until healing incorporates the little strip of Ivalon into a tough, fibrous line of closure. This type of repair has been done twice in our patients.

RESULTS

In summary, from December 1, 1955, to August 31, 1956, a period of nine months, we have done 110 herniorrhaphies of various kinds on 95 patients. Forty-two of those operations were done on patients less than 14 years of age. By and large, the routine operations carried out in this age group consisted only of the high ligation and excision of the hernial sac. Thus, there were 68 adult herniorrhaphies in which we might have used the polyvinyl plastic sponge. In these patients, Ivalon sponge implants were used 42 times, or in 62 per cent of the cases. We used a boot 23 times, a patch 9 times, a combination of boot and patch 8 times, and a caulking strip 2 times.

All except one of these repairs have been satisfactory. In that single instance, the patient had had an inguinal hernia previously treated by injections, and he clawed the dressings from the wound in the recovery room, thus encouraging the formation of a large hematoma. It became infected, and was drained. The organism was the ubiquitous hemolytic Staphylococcus aureus which is now cropping up frequently in our hospitals. It is also of interest that the Ivalon implants used in this wound had not been treated with an antibiotic. Three months following surgery, a small draining sinus persisted. The wound was explored, and the Ivalon implant, floating free except where sutured, was removed. In the presence of infection, Ivalon is not permeated by granulation tissue, and behaves like any ordinary foreign body. This patient had a combination patch-and-boot repair, and the internal inguinal ring boot remains uninvolved. Following that one instance of infection, we have resumed the antibiotic treatment of all implants, a procedure which we had abandoned after a few early cases.

Obviously, no "recurrence rate" is available. These patients have been carefully and personally followed, and the results to date have been good. The only real proof lies in the following single case. An obese, 75-year-old male came to surgery with an adenocarcinoma of the cecum and a huge right scrotal hernia which a hypertrophic truss was completely incapable of controlling. A right hemicolectomy was done without difficulty. Gloves were changed, and in examining the right inguinal area from within, one of us was able to insert his fist to the bottom of the scrotum. The peritoneum was incised about the internal inguinal ring, and the sac was allowed to retract distally. An Ivalon implant was placed over this very large hernial defect, and was held in place by three or four catgut sutures in the superior-medial border of the internal inguinal ring. Inferiorly and laterally, it fell over the iliac blood vessels. The incised peritoneum was then closed over this implant with a running suture, the entire repair taking less than five minutes. That was done in February, 1956, and there is no evidence of hernia now, nine months later. Here, then, is an example of a truly huge hernia closed by a simply applied "boot."

The use of Ivalon to replace or reinforce tissue deficiency has become commonplace, but we are unaware that its use as a "boot," reinforcing the internal ring from within, has been tried elsewhere, and we feel that at the present time it can be recommended as a most interesting addition to "routine herniorrhaphy."

Angiosarcoma in Postmastectomy Lymphedema

R. F. BIRGE, M.D., C. J. PEISEN, M.D.,
F. E. THORNTON, M.D., and LESTER D. POWELL, M.D.

DES MOINES

Early recognition provides the only chance of halting the multicentric angiosarcoma which develops occasionally in the edematous arm of a patient who has had a radical mastectomy.

The sequence of events may be summarized as follows. A middle-aged woman has a radical mastectomy because of cancer. Lymphedema of the ipsilateral arm develops shortly thereafter, Several years later, one or more purplish-red, elevated lesions apear in the skin of the arm. The nodules grow rapidly, and satellite lesions spring up about their perimeters. Progression is rapid, with frequent extension to the skin of the thorax. Death results from pulmonary metastasis.

Report of Case

We have followed a case in which angiosarcoma appeared 16 months after radical mastectomy for adenocarcinoma, causing death within 20 months.

A white married woman, aged 53, entered the hospital in April, 1947, complaining of pain in the left breast of two weeks' duration. Six months previously she had first noticed a dimpling of the skin of the left breast just below and outside the nipple, but she had not consulted a physician until the lesion became tender.

Following left radical mastectomy, there was a slight serous drainage from the wound, but healing progressed rapidly and without complication. On pathologic examination, the lesion, which had a diameter of 2.5 cm., was classified as grade 3 adenocarcinoma. Two axillary lymph nodes were sites of metastasis. Postoperatively, the patient was given a course of x-ray therapy.

Readmission to Hospital. Twenty-six months following the mastectomy, the patient was again admitted to the hospital because of the presence of painful areas along her left upper arm.

Ten months previously, she had twisted the arm while she was asleep, and a week afterward she had strained the arm again. Immediately thereafter, she had noticed a small reddened area on the antero-medial aspect of the arm, just above the elbow. The lesion had gradually enlarged and become tender. Because of her fear of metastasis, palliative x-ray therapy had been administered without biopsy. The lesion regressed, only to reappear after a few weeks, and another one developed over the left deltoid muscle. Again, x-ray therapy brought temporary subsidence. During the month immediately preceding her rehospitalization, the lower lesion had enlarged rather rapidly.

The arm showed moderate lymphedema and presented two large plum-colored, rather soft cutaneous lesions in the sites that have been described.

Surgical Pathology. A biopsy specimen from the lower lesion was composed of soft, deep pink, gelatinous tissue. Microscopically, its superficial aspect exhibited edema, necrosis and hemorrhage. More deeply, there appeared a mass of anaplastic angiomatous tissue composed of cells with large nuclei containing prominent nucleoli. Many channels lined by the neoplastic endothelial cells contained erythrocytes. Hence, the lesion was classified as hemangiosarcoma.

Shortly after the biopsy, a left interthoracoscapular amputation was performed.

Upon examination of the surgical specimen, it was observed that the skin of the arm was thick, the subcutaneous tissue heavy, and the fascial planes distinctly edematous. No obstruction of the larger vessels could be demonstrated. No neoplastic nodes were found in the axilla. The arm presented two large, elevated multilobular areas of peculiar purplish-red discloration of the skin. One, situated just above the elbow antero-medially, was irregular in outline, measuring approximately 11 x 7 cm. The lesion of the left deltoid region was somewhat smaller. Adjacent to each lesion, numerous minute, deep-pink macules and papules were distributed. A few small, faintly-discernable areas of pinkish discoloration and telangiectasis were also to be found between the two larger lesions and over the shoulder, extending to within two centimeters of the margin of the excision. The lesions were superficial, penetrating no more than one centimeter subcutaneously. There was no evidence of deep neoplastic infiltration of the tissues of the arm.

Microscopic studies confirmed the diagnosis of multicentric angiosarcoma of the left uper arm complicating postmastectomy lymphedema.

Course. Three months following forequarter amputation, a dusky-red area of discoloration appeared in the skin from the shoulder along the amputation scar. Again, the microscopic picture was that of angiosarcoma.

Thereafter, other lesions appeared, and they enlarged and fused with one another to form a nodular, purplish-red mass. For several months, the neoplasm was confined within the immediate area of amputation, but eventually it extended across the mastectomy scar to involve almost the entire left thorax. In the meanwhile, the patient remained in surprisingly good general condition, until ultimately she developed respiratory difficulty and failed rapidly. Death occurred while she was at home, approximately three years after the mastectomy, or about 20 months subsequent to the appearance of the angiosarcoma.

Postmortem Examination. At necropsy, a remarkable, huge neoplasm was seen to occupy the skin of the left thorax over the sites of radical mastectomy and interthoracoscapular amputation (Figure 1).

The neoplasm had a generally coarse, irregularly nodular, bulging surface, eroded in places. Peripherally, it presented numerous isolated macules, represented by very small zones of dusky-pink discoloration of the skin, lying in relationship to small, rounded, slightly protuberant reddish tumors. More centrally, these rounded mounds became larger and crowded together, producing the irregular nodular appearance previously mentioned

The peripheral satellite lesions were confined to the skin, whereas centrally the neoplasm pene-

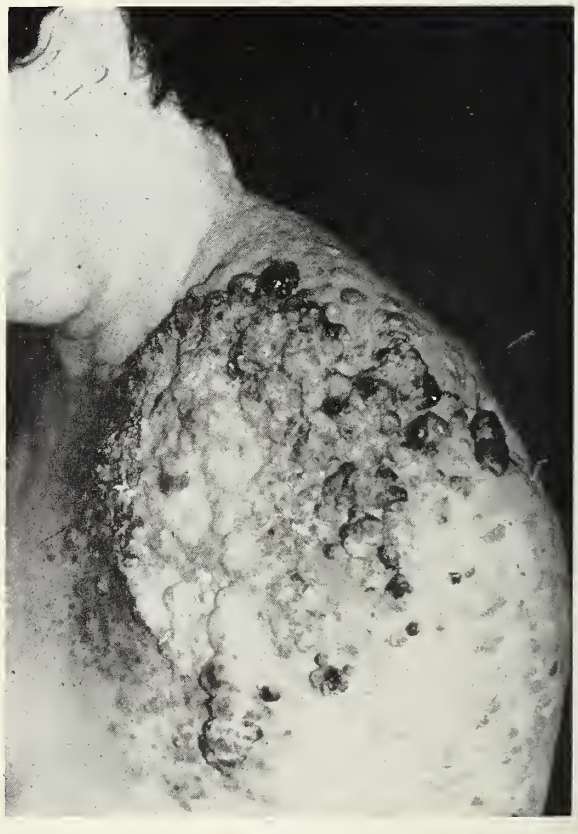


Figure 1.

trated deeply between the ribs to involve the parietal pleura over a broad area.

The left pleural cavity was filled with clear, thin fluid. The mediastinum was displaced to the right. The immediate cause of death was pulmonary atelectasis.

No evidence of metastasis of either neoplasm was encountered anywhere in the body.

CLINICAL FEATURES

It was in 1948 that Stewart and Treves[1] called attention to the striking clinical and pathologic features of this "heretofore unrecognized and unreported sequel that ensues in an edematous upper extremity that has developed following radical breast surgery but long after the malignant breast neoplasm has apparently been arrested."

Our case is similar to 19 other reported cases, except in that the onset of the angiosarcoma was unusually early—16 months after the mastectomy. In the case reported by Hall-Smith and Haber,[2] angiosarcoma appeared in the arm of an elderly woman two years after a left radical mastectomy. In other cases, the lapse of time between the mastectomy and the appearance of an angiosarcoma has been much longer.

The six cases described by Stewart and Treves are illustrative of the major clinical features of the condition. All were women. The youngest was 37 years of age at the time of radical mastectomy, and the eldest was 60. In four cases, the primary diagnosis was carcinoma; in one, adenosarcoma; and in one, papillary adenocystoma. In none was evidence of axillary metastasis found. In four cases, preoperative radiation had been given. Except for lymphedema of the ipsilateral arm (delayed in one case), no patient had any important postoperative complication. In this series, the shortest interval between mastectomy and the appearance of the angiosarcoma was six years, and the longest was 24 years.

According to Nelson and Morfit,[3] angiosarcoma appears in the skin of either the upper arm or the forearm, and in only three out of 17 cases has the process been reported to penetrate beneath the deep fascia. The lesions spread rapidly. Death is usually due to metastasis, notably to the lungs.

PATHOLOGY

Stewart and Treves had three amputated extremities available for dissection, and were able to study one of them meticulously. The skin presented a striking appearance, showing three types of lesions. First, the classical manifestations of prolonged, severe lymphedema were seen. Next, there were six discrete, red-to-purple polypoid tumors measuring up to four centimeters in diameter. Finally, there were myriads of reddish papules averaging four to eight millimeters in diameter protruding very slightly above the epithelial surface. Occasional linear telangiectases were also found. Moreover, deeper lesions were present, the subcutaneous tissue of the forearm presenting many bright-red, soft, friable areas.

On microscopic examination, they found lesions of multiple origin and in every phase of development. At the one extreme, they encountered numerous dilated, proliferated lymphatics widely distributed through the tissues of the arm, particularly about veins. It was not possible to say when the process of lymphangiectasis became one of neoplastic modification, for in many areas the endothelial lining cells of dilated lymphatics were not enlarged, whereas in others, the cells were larger and the nuclei bulged into the lumina, and in still others, the picture was anaplastic.

The dilated proliferated vessels contained few or no erythrocytes. On the other hand, large solid tumors contained much blood. This phenomenon they attributed to necrosis and interstitial hemorrhage.

Stewart and Treves concluded that the condition is an entity of lymphatic origin complicating lymphedema. They designated the process *lymphangiosarcoma.*

In our case, a predilection of the neoplasm for growth in the skin was well demonstrated in sections carried through the periphery of the thoracic mass. Here, one found great numbers of infiltrating capillary-like tentacles confined, for the most part, to the skin and avoiding subcutaneous fat. These channels were innocuous in appearance, being lined by small cells, yet it was apparent that they had tremendous infiltrative capacity. Here and there, such channels formed minute condensations of tangled, closely-spaced meshworks of what appeared to be capillaries lined by enlarged endothelial cells. Other, larger meshworks of neoplastic channels corresponded to the macules and papules grossly visible in the skin.

It could also be observed that infiltrating vascular tentacles found their way subcutaneously along strands of stroma. Thus, one could sometimes find excessive numbers of thin-walled channels accumulated around small arteries and veins. They appeared to represent extensions of a cutaneous neoplasm, rather than transitions between lymphangiectases and neoplasia.

More centrally, where large aggregates of closely apposed vessels formed solid masses of neoplastic tissue, some of the channels were rather uniformly lined by relatively small endothelial cells. On the other hand, in many areas the cells were larger, and the channels less perfectly formed.

Widely throughout the neoplasm, erythrocytes were found in its constituent channels, not only in areas of hemorrhage or necrosis, but also in deeply protected areas as well as in the newest, most peripheral cutaneous ramifications.

COMMENT

An outstanding feature of postmastectomy angiosarcoma is the presence of multiple lesions of hemorrhagic appearance surrounded by satellite lesions. It leads one to suspect that the deep neoplastic ramifications that are found in occasional advanced cases may represent extensions of the neoplastic process, rather than transitional zones between lymphangietasis and lymphangiosarcoma.

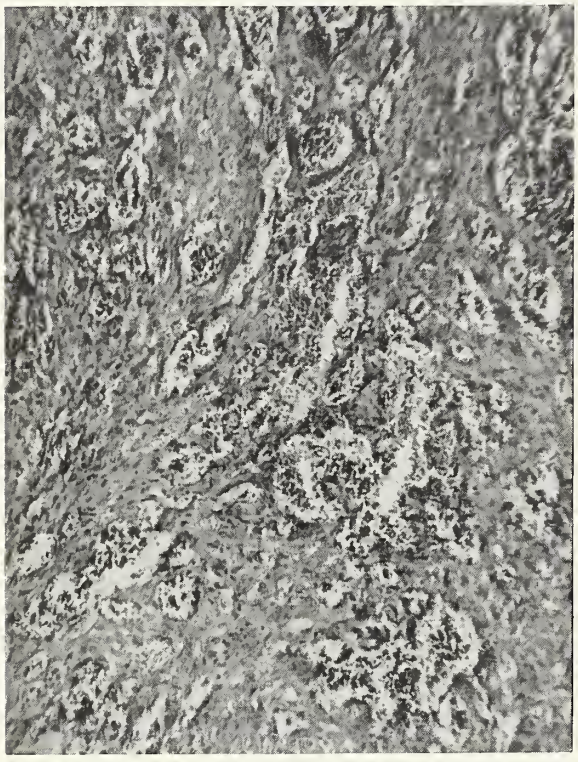


Figure 2. Low-power view of biopsy specimen, showing presence of numerous erythrocytes.

Our case well illustrates that the lesions begin—at least usually—in the skin. Although they may eventually infiltrate the arm or the thorax to a considerable depth, they first extend within the skin, sending forth capillary tentacles which frequently form satellite lesions.

Moreover, throughout the study of our own material, we were annoyed by the fact that, although we had a classical example of the condition that had been described by Stewart and Treves, the histologic preparations showed unquestionable evidence of circulation of erythrocytes throughout the primary lesions (Figure 2), the zone of extension to the left shoulder region, and notably the newest, most peripheral ramifications on the thorax.

The presence of erythrocytes has troubled others. For example, Hilfinger and Eberle[4] state, "We are not totally convinced that this tumor arises solely from lymphatics. Not infrequently vessels were seen packed with erythrocytes, without surrounding hemorrhage, whose endothelial nuclei showed changes suggestive of neoplasia. While it is true that these may be lymphatic vessels filled with erythrocytes carried from other sites of hemorrhage, may they not also be blood capillaries?"

Again, Jessner, Zak and Rein[5] say, "Since many of the lesions appear dark red clinically, we consider that they must consist of a mixture of lymphatics and blood vessels rather than being purely lymphangioblastic, an observation corroborated by microscopic examination even with due allowance for hemorrhage caused by biopsy trauma." They suggest the use of the term *angiosarcoma* to denote the presence of blood capillaries as well as lymphatics.

It would seem possible to explain the presence of circulating erythrocytes in lymphangiosarcoma by postulating that infiltrating malignant lymphatic channels are probably capable of establishing connections with blood vessels.

This possible explanation notwithstanding, it should be borne in mind that these lesions are primarily cutaneous, that they are red colored and obviously contain much blood, and that when examined microscopically they show the presence—at least in many cases—or circulating erythrocytes. In conclusion, we should think that the concept that this lesion is a *lymph*angiosarcoma deserves reviewing.

TREATMENT

This remarkable syndrome cannot be looked upon simply as a variant of Kaposi's sarcoma. The process is rapidly progressive, and if not recognized and managed promptly, it is rapidly fatal. In contrast, Kaposi's sarcoma usually has a prolonged course. Although the neoplasm may appear as a multicentric involvement of the skin of an extremity, lymphedema, when present, usually represents a late complication rather than a precursor state.

Thus far, only one patient with postmastectomy angiosarcoma has survived as long as five years (Southwick and Slaughter[6]). A woman aged 49 had noticed the presence, over a period of months, of red-colored lesions on her left arm. She had had a left radical mastectomy eight years previously, with lymphedema developing postoperatively. The diagnosis of lymphangiosarcoma was confirmed by biopsy. However, interthoracoscapular amputation was refused. Six weeks after completion of a course of x-ray therapy, all nodules had disappeared.

Rawson and Frank[7] have reported the disappearance of local lesions following x-ray therapy, but with ultimate death due to metastasis. Although Nelson and Morfit have observed similar regression, they point out that Roentgen ray therapy has not been uniformly successful. Hence, emphasizing that the lesions seldom penetrate the

deep fascia, they recommend utilization of extensive skin, subcutaneous and fascial excision, with grafting. They obtained good local results with this procedure in one patient, but she subsequently died of metastasis.

A case managed by simple excision has been described by Bowers, Schear and LeGovan.[8] However, the patient has not been followed long enough to enable one to place confidence in their procedure.

Although Southwick and Slaughter emphasize that the disability and deformity associated with interthoracoscapular amputation should not be underestimated, most authors have recommended radical surgery because it offers the best chance for recovery. Poor results thus far experienced with interthoracoscapular amputation would appear to be a consequence of delay in diagnosis or in decision to operate. For example, in our case there was a 10-month lapse between the appearance of the lesions in the skin and the performance of the surgery. Moreover, the lesions which appeared postoperatively were located in skin which might have been sacrificed, had we had a full comprehension of the potentialities of this neoplasm for insidious, wide cutaneous infiltration.

It is important to remember that angiosarcoma complicating post-mastectomy lymphedema is a multicentric process. Hence, patients managed with conservative surgery or radiation may develop new lesions.

It can be concluded that if radiation therapy is not promptly effective, very wide excision or interthoracoscapular amputation is indicated. Procrastination when one is dealing with postmastectomy lymphedema complicated by angiosarcoma cannot be justified.

SUMMARY

A syndrome of carcinoma of the breast, treatment by radical mastectomy, early development of postoperative lymphedema and the ultimate appearance of multicentric angiosarcoma has been exemplified by a case in which angiosarcoma appeared unusually early.

The presence of circulating erythrocytes in the striking red-colored lesions, which develop in the skin rather than in the deep tissues of the lymphedematous arm, would seem to be compatible with *hem*angiosarcoma, despite the fact that the process was originally designated *lymph*angiosarcoma.

The neoplasm grows rapidly by sending out through the skin numerous capillary tentacles that give rise to satellite lesions. Eventually, as the neoplasm enlarges, it also infiltrates deeper structures, and may metastasize.

Treatment depends upon early recognition, confirmation of the diagnosis by biopsy, and unless there is prompt response to radiation therapy, very wide excision beyond any possible areas of cutaneous ramification of neoplastic capillaries. Inasmuch as the process is multicentric, interthoracoscapular amputation, for the time being, remains the treatment of choice.

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Symposium on Peripheral Vascular Disease

At the Mayo Clinic, in Rochester, Minnesota, on September 23, 24 and 25, the Minnesota Heart Association and the Mayo Foundation will sponsor a Symposium on Peripheral Vascular Disease. There will be no registration fee, and physicians who wish to arrange for housing and to secure additional information should write to Dr. Guy W. Daugherty, 200 First Street Southwest, in Rochester.

The speakers for the first day, September 23, will be R. J. Boucek, M.D., Miami; Ivan Frantz, Jr., M.D., Minneapolis; H. B. Burchell, M.D., Rochester; F. J. Haddy, M.D., Chicago; C. A. Owen, M.D., Rochester; I. H. Page, M.D., Cleveland; M. B. Visscher, M.D., Minneapolis; G. E. Wakerlin, M.D., Champaign-Urbana; and J. P. Whisnant, M.D., and Leo P. Wright, M.D., Rochester.

On the second day, September 24, the following men will speak: E. V. Allen, M.D., N. W. Barker, M.D., and E. D. Bayrd, M.D., Rochester; F. H. Bethell, M.D., Ann Arbor; J. E. Edwards, M.D., Earle Estes, M.D., J. F. Fairbairn, M.D., and R. W. Gifford, Jr., M.D., Rochester; H. D. Green, M.D., Winston-Salem; and E. A. Hines, Jr., M.D., J. L. Juergens, M.D., C. H. Millikan, M.D., R. M. Shick, M.D., and J. A. Spittel, Jr., M.D., Rochester.

On the final day, September 25, the speakers will be O. T. Claggett, M.D., Rochester; J. W. Culbertson, M.D., Iowa City; F. H. Ellis, Jr., M.D., Rochester; E. S. Gurdjian, M.D., Detroit; John C. Ivins, M.D., W. F. Kvale, M.D., W. M. Manger, M.D., C. S. MacCarty, M.D., and D. C. McGoon, M.D., Rochester; J. H. Moyer, M.D., Philadelphia; and Grace M. Roth, Rochester.

Group Therapy for Obesity

DANIEL A. GLOMSET, M.D.

DES MOINES

*"There was a time when I believed in the persuadability of man and had the mania of man mending. Experience has taught me better. The ablest physician can do little in the great lazar house of society. He acts the wisest part who retires from the contagion."—Robert Southey**

Southey's time-honored method of "retiring from the contagion" has proven an unsatisfactory treatment for the corpulent, as well as for other types of patients, and unfortunately other methods have likewise failed. In private practice, less than 10 per cent of the obese achieve the desired amount of weight loss. Of those who reduce successfully, 75 per cent regain most, if not all, of their poundage within two years. Medical and lay periodicals have publicized the desirability of eliminating excess weight. Dozens of diets have been formulated. Multitudes of magical gimmicks have been proffered to the gullible public. Yet obesity continues.

Much in the time-honored regimen seems good, however. It seems logical that the patient should be given a physical examination before treatment is instituted. He should be given a low-calorie diet. He should be apprized of the high mortality and morbidity accompanying excess weight. He should be instructed to return to the office for periodic weight determinations. Mild exercise may be prescribed. He may be given medications such as amphetamines, bulk producers (or even thyroxin) at the discretion of the doctor or upon the demand of the patient.

In spite of the best efforts of the physician, however, the patient all too often fails to stay on the diet, fails to take the prescribed exercise, fails to return for check-ups and fails to lose weight. Indeed, he often becomes more obese. What is the trouble?

The answer appears to be triphasic: (1) insufficient motivation; (2) lack of insight; and (3) inability to break (or to sublimate) the eating "habit-pattern." The problem is related to that of the alcoholic, but it is more difficult to cure since an alcoholic *can and must* stop drinking completely, whereas an obese person must continue to eat while he is "taking the cure."

Inasmuch as the therapeutic problems of alcoholism and obesity are very similar, and inasmuch as group therapy has been a valuable aid to the alcoholic, it would seem reasonable to apply the group method to the rehabilitation of obese patients. At first glance, it would appear that the leadership of such a group should preferably be placed in the hands of a psychiatrist. But unfortunately a plethora of psychiatrists is lacking, and the internist and the general practitioner have been called upon to manage many of these mundane matters. Such physicians can qualify themselves for group leadership, and may even find that the direction of such groups are an enjoyable respite from the day's routine.

Before forming a group, however, the practitioner should acquaint himself with some of the mechanics of the group method. "Activity groups" and "analytic groups" seem beyond his ken. The type of group best suited to the goal under discussion would seem to be the "directive group." In such an assembly, the leader activates, directs, stimulates or guides patients toward specific ends. "Free association" is at a minimum, and when it is encouraged, it is focused upon topics suggested by the leader. The directive method does not result in basic intrapsychic change; rather, it results in corrected attitudes and values, an improved self-awareness and a more wholesome view of the outer world. It is an intellectual, rather than a spiritual or an analytic form of therapy.

The processes that occur in directive groups include transference, associative thinking and catharsis. Transference is a communication of feelings from one to another. Such interchange may occur from patient to leader, or from patient to patient. Associative thinking is thought produced relative to current experience and concern. This method is used to a great extent in group sessions. Catharsis is the process of getting rid of one's feelings. *Directive* catharsis results when the leader asks a leading question such as, "What is it about you that makes you eat more than is prescribed in your diet?" *Forced* catharsis is often used by untrained leaders. It consists of the leader's hammering away at a given question until the patient is forced to give the answer that the leader desires. *Vicarious* catharsis consists in self-revelation and release of tension through finding one's own problems mirrored in the experiences of others.[1, 2] Evidence of this phenomenon is to be found in the nodding of heads that occurs when one of the group makes a revelation about himself.

The advantages of this form of treatment for obesity are identical with the advantages of group therapy for any other ailment. (1) Added interest and incentive are provided for the necessarily long-term treatment. (2) The social situation pro-

* English poet and critic, 1774-1843.

motes the desensitization of the individual. (3) New thoughts and facets of personality are revealed—ones which the patient would not have had occasion to reveal to the physician in individual therapeutic sessions.[4] (4) Non-communicative patients often find relief in listening to experiences and thoughts of others which resemble their own. (5) The patient realizes that his problems are not unique, and there is a resultant breakdown in his feelings or isolation.[2] (6) The group is a small segment of society, and if the individual can work out his problem in a small group, he will be better able to do so in society as a whole.[5]

There likewise are some disadvantages of the group method. (1) The patient may feel uneasy when discussing intimate matters with others. (2) Progress is slow, for little focus is placed upon the problems of any one individual. (3) In a group, as in a mob, the individual is more willing to *believe* than to *understand.* (4) The group offers unusual opportunities for resistance. The patient may be silent or absent, and the group will carry on without him.

METHOD

My own particular method, as I have worked it out in my practice as an urban internist, is to examine a patient, give him a diet and set an optimum weight goal for him. The patient is then given a lecture on the increased morbidity and mortality associated with obesity. In the next session, he is quizzed about his past history in relation to the alteration that has taken place in his body weight. Then, he is given the choice of carrying on with the individual sessions or of joining a group. If he chooses to join a group, he is placed in a set of three to six persons of the same sex[6] and similar backgrounds. The group meets every other fortnight, and on alternate fortnights the individual is seen alone in order that he may be allowed to discuss personal matters such as blood pressure or bunions, which may be of no concern to the group, or matters of such an intimate nature that he is reluctant to share them with anyone other than the doctor.[7, 8] The group sessions usually last 45 minutes, but often the patients get together without the leader before and after each session.

In the meeting, a sincere attempt is made to minimize "lecturing," with the realization[10] that the lecture method is seldom fruitful of change in attitude or habit. Instead, the leader suggests topics for discussion, such as "eating habits during childhood" or "relation of mood swings to eating habits." Attempts are made to have one patient suggest to another some means that may help him to solve his problems. The doctor is frequently tempted to provide the "answers" to the questions that are proposed, but he must remember that the patients will benefit little from his doing so. Each of them must find the solution for himself, or find the solution for the others in the group, and transfer that solution subconsciously or consciously to himself. It is a tedious process, but it is the only one that will provide lasting value to the patient.

TABLE 1

	Case	Adm. Wt.	Present Wt.	Normal Wt.	Comment
Men	RB	246	215		Lost to normal wt. 190, dropped out of class, regained to 226, reentered class.
	GB	250	204	154	Lost to 176, dropped out, reentered class at 210, now steady at 195-200, cannot seem to get any lower.
	RN	282	281	177	Lost to 240, dropped out of class, reentered at present weight.
	HR	209	206	168	Many previously unsuccessful attempts to reduce. Came to only two sessions, didn't lose. Dropped out.
	LK	224	200	160	Lost to 178, dropped out, regained to 201, refused to come to class, "too nervous."
Women	GR	169	155	155	Lost to normal weight, seen for periodic checkups, maintains normal weight.
	SA	152	127	125	Lost to 127, dismissed from class, is maintaining normal weight.
	EL	214	168	141	Lost to 161, dropped out of class, reentered at 180, now 169.
	SD	240	180	125	Attempting to lose for 40 yrs. wt. loss now partially aided by congestive heart failure and cardiac cachia.
	ML	213	188	147	Rather faithful in class attendance. In past 18 mo. has only lost 2 lbs., still struggling.
	MN	199	200	140	Lost to 177, dropped out, regained to 206, can't lose now, poor motivation, regular attender.
	MM	150	125	122	Last wt. 134. Poor class attender. Quiet, hostile teenager. Now in college.
	DS	258	265	141	Attended several classes, stopped coming, gained more weight. Now will try again. Insight but no motivation.
	LGS	229	236	141	Only attended few classes, lost from sight. No insight. Deep psychoneurosis.
	EH	173	168	147	"Attempting to reduce for yrs." Only attended few classes, Retinopathy, thrombosis abdominal aorta, still won't reduce. No insight.
	WKH	168	167	138	In and out of class 3 times. In class loses 10 lbs. in 6 months, regains it on outside, seeking benefit from "fads." Depressed.

RESULTS

Seventeen typical cases have been chosen for summarization in the accompanying tabulation (Table 1). For the sake of brevity, much interesting psychologic information has been omitted.

DISCUSSION

The results of this attempt at group therapy are promising, but leave much to be desired. They are similar to the results of Harvey,[10] who worked with a much larger group over a shorter period of time. It seems that this avenue of approach more nearly approximates the desired goal than has any other that has been used heretofore. Hecht says, "It is not possible to understand the nature of obesity unless one considers the psychological aspects as primary."[11]

The patient must achieve *insight*[8, 12, 13] into the basic causes of his obesity, must then be able to arrive at a deep motivation to reduce, and must later develop a sublimation. The last of those is most difficult of all. After the patient gets the realization that he eats more food when he is depressed or nervous in an effort to obtain emotional peace through eating, he must seek and find other tension-releases. Such active forms of enjoyment (or sublimations) are difficult for the obese person to find or manufacture, but they are necessary.

Men are less faithful "meeting attenders" than women are, for a man has more difficulty in admitting to himself and to others that he is unable to "get the job done" by himself. There are many casualties. Patients drop out of the group sessions and reenter them. These "fall-outs" do not seem to be more numerous than those who quit and resume other therapies for obesity, and they may be less common. Afted two years of such intermittent therapy, it seems that some of the patients are developing increased insight into their problems, and perhaps they are acquiring stronger motivation. The slowness of their progress may be salutary, for if the process of education were too rapid, there would be a lessened probability of permanence.[14, 15, 16] It is this realization that prompts them to continue their attendance.

CONCLUSIONS

1. Group therapy sessions have been carried out under the direction of a non-psychiatric physician to determine their value in the treatment of obesity.

2. The conviction is growing that this modality holds some promise for permanent relief of recalcitrant cases of obesity.

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Kansas City Southwest Clinical Conference

The Kansas City Southwest Clinical Society has announced its thirty-fifth Fall Clinical Conference, to be held at the Municipal Auditorium in Kansas City, Missouri, September 30 to October 3, inclusive. All physicians are cordially invited to attend.

The guest speakers will include Dr. Paul Dudley White, Boston, cardiologist; Dr. Willis E. Brown, Little Rock, obstetrician-gynecologist; Dr. Eugene P. Cronkite, Upton, New York, pathologist-hematologist; Colonel Albert J. Glass, Washington, D. C., neuropsychiatrist; Dr. John H. Lamb, Oklahoma City, dermatologist; Dr. R. Bruce Logue, Emory University, Georgia, internist-cardiologist; Dr. William P. Longmire, Jr., Los Angeles, surgeon; Dr. H. Marvin Pollard, Ann Arbor, internist-gastroenterologist; Dr. Orvar Swenson, Boston, surgeon; Dr. Beverly T. Towery, Louisville, internist; Dr. Warren E. Wheeler, Columbus, pediatrician; and Dr. Judson D. Wilson, Columbus, orthopedist.

Color television broadcasts are to be provided through the courtesy of the Smith, Kline & French Laboratories. Those programs will include a two-hour clinical symposium on ulcers and one-hour programs on gynecology and obstetrics, and tumors. In addition, there will be panel discussions, numerous luncheons, and a banquet each for the medical alumni of Kansas and Missouri Universities. There will, of course, be numerous scientific and technical exhibits on display.

Selection of Patients for Intracardiac Surgery

JOHN E. GUSTAFSON, M.D., AND WILLIAM H. MYERLY, M.D.

DES MOINES

THE RAPID ADVANCES in successful intracardiac surgery have made the recognition and evaluation of congenital heart lesions increasingly important. At the present time, surgical correction can be considered practical for ventricular septal defect, atrial septal defect, pulmonary stenosis, tetralogy of Fallot, patent ductus arterious, coarctation of the aorta, anomalies of the aortic arch and some combinations of these anomalies. This paper will briefly outline the salient features of the first four of the ones we have listed.

VENTRICULAR SEPTAL DEFECT

Ventricular septal defect is the most commonly diagnosed congenital heart lesion. The cases can conveniently be subdivided into three types. The ones which are less than half the size of the aortic valve opening may be classified as small. Those greater than the aortic valve are considered large. Those in between are classed as moderate sized.

The symptoms vary, depending upon the size of the defect. The patient with a small defect is usually asymptomatic, and may live to old age without surgery. His only danger is of subacute bacterial endocarditis. The patient with a moderate or large defect will have exertional dyspnea, easy fatigue and repeated pulmonary infections. The major physical finding in all three is a thrill in the third and fourth left interspaces, with a harsh systolic mumur heard over the entire chest. The pulmonary second sound is normal or of increased intensity.

The electrocardiogram, except in those with small defects, may show right or left ventricular hypertrophy, or both. The x-ray usually shows slight to moderate cardiac enlargement, with increased pulmonary vascular markings.

The usual course of patients with moderate or large defects involves the production of changes in the pulmonary arterioles. At first there is hypertrophy of the media, followed by intimal thickening and proliferation. As these changes occur, the resistance (and pressure) in the pulmonary artery will increase, and the amount of left-to-right shunt will decrease.

Cardiac catheterization is indicated in these patients, so that the clinician may determine the size of the left-to-right shunt and determine the degree of pulmonary arteriolar resistance. If the shunt is small and the resistance low, surgery can be safely delayed. If the shunt is large or if the resistance is great, surgery must be urged before irreversible pulmonary arteriolar changes have occurred. If the shunt has reversed and become right-to-left, it is already too late, and surgery will prove fatal.

The surgical technic involves the use of a bypass procedure (an artificial heart and lung machine) so that the heart may be opened and direct repair may be accomplished. If the defect is small enough, the edges can be approximated and sewn together. If a larger defect is present, a plastic sponge may be used either as a patch or as caulking to be tied down over the defect. The mortality from this type of surgery varies with the severity of the lesion, but in good-risk patients it should be under 10 per cent. In nine patients done to date at Iowa Methodist Hospital, Des Moines, there have been no fatalities.

The postoperative care is critical because of the possibility of hemorrhage during the first 12 hours and of atelectasis in the first three days. Afterward, the patients recover rapidly and have been discharged two weeks after surgery. Follow-up on these patients has regularly shown increased exercise tolerance, with less fatigue and dyspnea.

PULMONARY STENOSIS

Pulmonary stenosis is easily mistaken for ventricular septal defect. Patients with this defect have the same symptoms, and as would be expected, the symptoms vary with the degree of the stenosis. Usually failure does not occur until young adult life, although it may take place in small children. Once failure has occurred, surgery is urgent and carries an increased risk.

Patients having pulmonary stenosis exhibit physical findings that are slightly different from those having ventricular septal defects. The thrill is usually more easily felt in the first and second interspaces and in the suprasternal notch. A systolic murmur may be heard over the whole chest. The second sound in the pulmonic area may be normal or decreased in intensity, and it is usually split.

Right ventricular hypertrophy can be demonstrated by the electrocardiogram, and the degree of abnormality indicates the severity of the stenosis. Characteristically, x-ray films show a relatively normal-sized heart, with a prominent pulmonary artery on the left (the typical poststenotic dilatation) and normal lung markings.

Cardiac catheterization will show the increase in pressure in the right ventricle. Although this pressure is directly related to the degree of stenosis, absolute indications for surgery cannot be determined for children. A pressure of 60 in the right ventricle of a six-months-old infant (as against a normal of under 30) shows a far more serious lesion than does a pressure of 100 in an adult.

The indications for surgery depend, to some extent, upon the method of correction that has been proposed. The Brock method, in which an instrument is forced through the wall of the right ventricle and is passed blindly through the stenotic area, gives satisfactory results in adults, in that the pressure is reduced about half way to normal. Thus, an original pressure of 120 may be reduced to 60 or 70 postoperatively. But if direct-vision technics are used, either through hypothermia or through a by-pass arrangement, the valve or the infundibulum can be opened completely by means of a sharp knife, and the pressure can be expected to return to normal postoperatively. In a growing child, one may expect a gradual rise in pressure as an increasing amount of blood must be forced through a partially opened valve. In such a patient, a second operation is likely to be required when no more than a partial correction has been achieved on the first attempt. In addition, the open technics allow a hitherto unrecognized infundibular stenosis to be corrected.

Open methods have been performed under hypothermia, in which the pulmonary artery is opened and the valve is exposed from above, and by the by-pass technics, in which the right ventricle can be opened safely. Mortality for this type of surgery has not been established, but it should be under five per cent.

TETRALOGY OF FALLOT

A combination of ventricular septal defect and pulmonary stenosis produces the syndrome called tetralogy of Fallot. In this condition, there is an apparent overriding of the aorta and right ventricular hypertrophy. Again, there is a wide spectrum ranging from a pin point opening in the pulmonary valve, resulting in marked cyanosis, to the so-called acyanotic tetralogy, with a moderate infundibular stenosis and a right-to-left shunt only with exercise. In the cyanotic child, exercise tolerance may be limited to a few steps. Polycythemia may be marked. In the acyanotic group, the symptoms will be similar to those in patients with ventricular septal defects.

Physical findings will vary, depending upon the degree of cyanosis, but cardiac findings will be similar in all cases that do not have a pulmonary atresia. These findings are similar to those exhibited by pulmonary stenosis without the septal defect—i.e., a harsh, systolic thrill and murmur to the left of the sternum. The second sound in the pulmonary area is diminished, but not split.

The electrocardiogram will show right ventricular hypertrophy. Roentgenograms will show a normal or slightly enlarged heart, depending upon the degree of stenosis. A mild stenosis is compatible with a left-to-right shunt, and the heart will be enlarged, with normal or increased vascular markings. In the more typical severe case, the heart will be normal in size, and the lung markings will be decreased.

If the patient is cyanotic, cardiac catheterization may not be necessary before surgery, although it is usually done in an attempt to insure the presence of a pulmonary artery. The pressure in the right ventricle will equal that in the left, and oxygen saturation will rise in the right ventricle only slightly if at all.

Surgery for the patient with a tetralogy of Fallot has been available since Blalock originated the subclavian-pulmonary anastomosis in 1945. This procedure increases the supply of blood to the lungs and will regularly decrease or eliminate cyanosis and increase exercise tolerance. Risk of this surgery is comparatively low. But the patient still has a deformed heart, and very few are completely asymptomatic postoperatively. The indicated surgery at the present time is the complete intracardiac repair of the defect. The infundibular stenosis can be removed, and the ventricular septal defect closed. The overriding aorta has not been a problem, and in most cases is relative rather than actual. The surgical risk of this operation at this time is slightly higher than is the hazard of the anastomotic one, but the superior results in terms of an anatomically normal heart and improved function probably outweigh any such consideration. A number of patients with functioning Blalock anastomoses have undergone complete correction with excellent results.

Nine patients with this lesion have been operated upon at Iowa Methodist Hospital, with one death. Of the eight survivors, six are now completely asymptomatic, and two are improved but still use digitalis.

ATRIAL SEPTAL DEFECT

Atrial septal defects are frequently asymptomatic in the early years of life. The variations in findings, as well as in surgical results, depend not only upon the size of the defect but also upon its exact location in the septum. Septum primum defects may be similar in size to the commoner secundum defects, but they carry a much higher surgical risk and produce symptoms at an earlier age.

The physical findings of atrial septal defect are less striking than are those of most of the other congenital heart lesions. The murmur is best heard in the pulmonic area, and is usually soft and unac-

companied by a thrill. The second sound in the pulmonic area is split as a result of the prolonged emptying of the distended right ventricle. Diastolic murmurs due to a relative tricuspid stenosis are common.

Electrocardiograms regularly show an incomplete right bundle branch block, or rarely, a right ventricular hypertrophy pattern. X-ray films show an enlarged heart, with prominence of the pulmonary artery and increased vascular markings. In some cases, the cardiac enlargement may be slight, although catheterization will indicate a large shunt.

Cardiac catheterization will demonstrate an increase in the oxygen saturation of the blood in the right atrium, as compared with that of the blood in the vena cava. The development of pulmonary hypertension in patients with atrial defects of the secundum type is rare, whereas it is comparatively frequent in patients having defects of the septum primum or A-V canal type.

Surgery for atrial septal defects is available generally, and at least six methods have been used successfully for correction of secundum defects. In this area, the commonest technics are the well technic of Gross, hypothermia and cardiac by-pass with the artificial heart-lung. The well technic seems difficult, and is regularly successful only in correcting the secundum type defect. Hypothermia provides adequate time and exposure for the mending of simple defects. Mortality has been high, however, when a complex defect has been encountered that required more than seven or eight minutes for its repair. Our experience with the artificial heart-lung has been gratifying, and we have used it successfully on six patients, even though three of them were found to have atypical lesions. Although the preoperative preparation may be somewhat greater, the risk to the patient is probably about the same in the ideal case. In complicated defects, the heart-lung by-pass is clearly superior.

SUMMARY

Atrial and ventricular septal defects, pulmonary stenosis and tetralogy of Fallot are now correctible lesions. By-pass methods using an artificial heart-lung machine give acceptable results. At Iowa Methodist Hospital, 25 patients with these defects have had surgery, and there has been just one postoperative death. Of the 24 surviving patients, 21 are now asymptomatic, two are improved and one is worse than preoperatively.

Forty-Five Years of Cardiovascular Radiology

THOMAS A. BURCHAM, JR., M.D.

DES MOINES

Dr. Walter Bierring's many and varied successes in Medicine can be attributed in large part to his open-minded approach to new ideas and to the scientific curiosity that led him to investigate them. His early investigation of the use of x-ray in the diagnosis of cardiovascular disease was typical of him. In 1912, only 17 years following Roentgen's discovery of x-ray, Dr. Bierring and my father presented a paper on x-ray and heart disease at a meeting of the Iowa State Medical Society.[2] The observations had been made with the newly purchased equipment in the "Radiographic Department, Methodist Hospital, Des Moines." Their work had been undertaken in the true investigative spirit. It dealt with a powerful, new physical force, which then—and perhaps even now—held many mysteries.

After talking with Dr. Bierring and my father, and reviewing their 1913 publication, I thought it might be of interest to sketch the progress of cardiovascular radiology and, more specifically, the progress that has been made at the Radiology Department of the Iowa Methodist and Blank Memorial Hospitals in the diagnosis of cardiovascular disease.

EARLY DEVELOPMENT

Soon after Professor Roentgen described his classic experiment, a great many scientific and pseudo-scientific articles about x-ray appeared, and the honest investigator had considerable difficulty in distinguishing fact from fancy.[5] The excellent book on roentgen diagnosis by Dr. Francis H. Williams proved to be the single most valuable guide.[17] Dr. Williams had summarized the important foreign contributions and added many of his own—some of which had already been confirmed by other observers. Using Dr. Williams' book and other sources, Drs. Bierring and Burcham began recording their observations. They attempted in each case to direct their attention toward (1) the movements and actions of the heart; (2) the posi-

tion of the heart; (3) the form of the heart; and (4) the size of the heart.

Most early investigators made the mistake of giving an unqualified clinical diagnosis on the basis of fluoroscopic and roentgenographic findings. They did not attempt to describe the variations from normal in the shadows of the heart and great vessels, but reported, rather, what they thought were the specific and invariable significances of each observed change in the shadows. Of course, they had a low batting average—so low that the classic methods of physicial diagnosis were much superior in revealing the clinical type of heart disease.

From the material in their 1913 paper, it is evident that Dr. Bierring and my father were not guilty of this error. I have been assured, however, that on other occasions they yielded to the obvious temptations,[1] but in the cases that they reported and as a general practice, they limited themselves to the description of variations from the normal, and did not attempt strict clinical classification.

One case of considerable interest was that of a 28-year-old man. The history and physical findings indicated a diagnosis of ventricular septal defect. The roentgen examination was negative. The authors contrasted this case with the marked roentgen changes in a patient with patent ductus arteriosus. With our modern concepts of the radiographic changes in these two conditions, we can see the obvious implications and can admire the honesty of their observations.

Following the initial interest and enthusiasm, the general field of cardiovascular radiology assumed a secondary role. This change was evident at a heart symposium during the 1929 meeting of the American Roentgen Ray Society.[15] Roentgenology's contribution was said to be limited to a few determinations and measurements concerning the size and shape of the heart and great vessels. Dr. Paul White read a paper which was quite deflating to the assembled radiologists.[16] In part, he stated, ". . . roentgenology is but one of several clinical methods of studying the circulation . . . [and like others] is incomplete in itself and . . . ranks down the list in value." Dr. White took some of the barbs from those remarks in the published version of the paper by adding a "later note" in which he listed six specific usefulnesses of the roentgen ray.

Following this brief airing, cardiovascular radiology again faded from the foreground. A few investigators continued to produce brilliant, isolated studies, but a coordinated advance had not begun. In 1924 Dr. Barney Brooks, a surgeon, injected sodium iodide into the femoral artery.[3] He then made a radiograph while the opaque solution passed through the vessel. Egas Moniz, in Portugal, described "arterial encephalography" in 1929, and Forsmann, working in Germany in the same year, successfully catheterized the right chambers of the heart.[9]

The long-awaited break-through came in 1938 at another heart symposium of the American Roentgen Ray Society. Drs. George Robb and Israel Steinberg presented their classic work on angiocardiography.[12, 13] These men provided the stimulus for new interest and action on the part of radiologists, cardiologists and, later, cardiac surgeons.

MODERN METHODS

The contributions that radiology has made to the diagnosis of heart disease have been, for the most part, due to elaboration of the ideas of Robb and Steinberg, for they depend upon the introduction of an opaque solution into the blood stream. The procedures vary with the particular part of the cardiovascular system to be studied. They also vary with the site and method of adding the opaque substance, and with the method of observing and recording the result. For convenience, these graphic methods of recording the circulation can be grouped into three major divisions: venography, arteriography and angiocardiography. Within each of them, there are various procedures best designed to demonstrate certain structures (Table 1).

TABLE 1

PROCEDURES FOR RADIOLOGIC CARDIOVASCULAR DIAGNOSIS

Venography	Arteriography	Angiocardiography
Peripheral (Extremities)	Peripheral (Extremities)	Venous
Intrathoracic	Intrathoracic	Selective
Intra-abdominal	Intra-abdominal	Direct via cardiac wall puncture
Intracranial	Intracranial	

Before giving more detailed consideration to these methods, let us return for a moment to the basic methods of roentgenologic observation—the fluoroscope and the roentgenogram. Today, these remain the most valuable diagnostic methods available to the radiologist. They have assumed new importance and have become more accurate as our knowledge of the anatomy and physiology of the cardiovascular system has grown. Often, only fluoroscopy and roentgenography are necessary in determining the definitive diagnosis in congenital or acquired heart disease. At other times, these methods indicate which type of the newer or more complex examinations should be used. The continued and increasing values of fluoroscopy and roentgenography are well discussed in a recent paper by Bruwer.[4]

The problems of the newer methods of cardiovascular roentgen diagnosis are complex. This complexity involves the technical aspect of adequately demonstrating the desired structures and accurately interpreting the finished record. This paper will outline only some of the technical problems and the more common solutions for them.

The rapid injection of a relatively large volume of radiopaque solution into the circulatory system is not without danger. The opaque media have been made less toxic in recent years, but the maintenance of their opacity to x-ray necessitates their containing a high percentage of iodine, and the possibility of iodine sensitivity always exists. Sensitivity testing must be carried out, and adequate emergency equipment must be maintained in the radiographic room.

For maximally clear recording of the desired phases in the filling and emptying of the cardiac chambers and vessels, specially designed radiographic equipment is necessary. This apparatus is usually both expensive and mechanically difficult to maintain. In direct radiography, it is advantageous to use very short exposure times for each radiograph. By shortening the exposure, one minimizes or eliminates blurring from the movements of the patient, the opacified blood, and the cardiac and vessel walls. Multiple exposures must be obtained at brief intervals if the examination is to yield a maximum of information. These short, numerous exposures in rapid sequence require the use of high-energy x-ray generators, switching devices of great accuracy and dependability, and a method of recording each event. Also, the opaque injection must be coordinated with these events. Often, much may be gained by having roentgenograms made simultaneously in two planes. Thus, one can achieve somewhat of a third-dimension effect and also show structures that might be obscured in a single projection.

Many machines have been used in making these rapid-sequence radiographs.[14] Mechanical devices for the rapid shifting of film-loaded cassettes are available. Another technic for recording consists of feeding roll film from 20 to 35 mm. wide into position for exposure and then onto take-up reels. The film, of course, must be shielded from light and from stray radiation. Other changers shuffle cut film into exposure and storage positions. By such means, direct radiographs can be made at rates of from one to 12 films per second. In bi-plane radiography, the same rates of exposure are obtained by coupling two units at the desired angle. Here, the problem is increased, but the difficulty of cross scatter x-ray is partially solved through the use of more efficient coning devices and film grids.

The short exposure times are facilitated through the use of high-tension switching tubes.[6] These tubes permit single exposures as short as 1/1500 of a second. Such an exposure speed completely eliminates unwanted motion.

The most recent approach to adequate recording of the opacified blood incorporates an entirely new and different principle. It is the use of an electronically intensified fluoroscopic image which may be photographed directly on ordinary light-sensitive film.[18] With a motion picture camera, exposures can be readily obtained at 15 to 300 frames per second. The resulting film strips can be fastened together as loops, and when they are projected they will simulate continuous repetitions of the cardiac events at the desired speed and magnification. Single frames can be reproduced as desired. A definite advantage of roentgen cinematography is that low energies are required for the operation of the image intensifier, and x-ray exposure to the patient and to the attending personnel is greatly reduced.

Injecting devices range from a manually operated syringe to rugged mechanical syringes powered by controlled gas pressure. These injectors are interlocked electrically with the film-drive and x-ray controls.

Recently, radioactive isotopes have been used in the study of the cardiovascular system.[7] Radiocardiology with Na^{24} is useful in the detection of intracardiac shunts and other abnormalities. The radioactive substance is introduced into the blood stream, and by continuous recording by means of radiation detectors, abnormal flows and dilutions are revealed. Venous and arterial circulation times are readily determined. Studies of tissue clearance of a radioactive tracer give an index of blood flow to a particular organ or site. Blood volume, red cell mass, plasma volume and extracellular fluid volume determinations by radioactive means are now routine in larger laboratories.

In 1953, active work began at Iowa Methodist Hospital in the more complicated methods of cardiovascular diagnosis. The impetus and encouragement came from the excellent cardiologists associated with Iowa Methodist and Raymond Blank Memorial Hospitals. Equipment for angiocardiography and cardiac catheterization was obtained, and the program has progressed steadily. The Radiology Department has participated in the evaluation of over 300 patients with congenital cardiovascular disease. These studies have included approximately 125 cardiac catheterizations and 60 angiocardiograms. Detailed reports of these studies are to be published soon.[8, 10]

During the past year, intracardiac surgery utilizing the extracorporeal mechanical pump-oxygenator has been in progress at this hospital.[11] The dramatic therapeutic effects to date have given the diagnostic team great encouragement and added stimulus to the detection of surgically correctable cardiovascular disease.

Who can predict what the next 45 years will bring in cardiovascular radiology? With the recent introduction of electronic image intensification and radioisotope technics, safer and more fool-proof diagnostic methods are sure to evolve.

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Mangle Burns of the Hand

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DES MOINES

"Mangle: A machine for pressing and smoothing cloth, especially sheets and other flat pieces."—Webster's DICTIONARY

THE INCREASING use of the small electric mangle in homes and the widespread use of the steam variety in commercial laundries have made mangle burns of the hand sufficiently common to justify our classing them as a medical entity. In this injury, the hand is subjected to the burning effect of a heated metal plate as well as to the crushing effect of rollers, which prevent the operator from withdrawing his hand until a releasing or reversing mechanism can be activated. As a result, the combined thermal and mechanical injury sustained by the hand is quite severe.

In mangle burns, one side of the hand is usually burned much more severely than the other because only one of the two opposing surfaces contains a heating element. In the four cases to be reported, only the palmar surface was burned, but dorsal burns also occur. The deformities and contractures of the hand which often result from these burns are due to loss of tissue, to the superadded effect of infection, and finally to the variable but inevitable shrinkage of the skin grafts which are used for coverage in cases of full-thickness loss.

The mechanical effects of palmar and dorsal burns, though not exactly opposite, are nevertheless quite different from one another. The late effects of palmar burns are an increase in the natural concavity of the palm and a flexion contracture of the fingers and thumb at all joints. Dorsal burns, on the contrary, tend to flatten the normal concavity of the palm and to cause a hyperextension deformity of the digits, except at the proximal interphalangeal joints, where the fingers are often drawn into acute flexion contracture because of destruction of the central slip of the extensor tendon. Adduction contracture of the thumb and interdigital webbing are common results of both dorsal and palmar burns. When both surfaces of the hand have been burned, the effects are variable and bizarre.

Unlike burns elsewhere on the body surface, in which final and definitive skin grafting may usually be done in one stage, burns of the hand—especially palmar ones—require grafting in two stages.

Thin grafts take easily, but they undergo marked secondary shrinkage. Thick grafts shrink little, but they take with great difficulty. Thick skin grafts such as are requisite for the prevention of contractures of the hand and fingers will not take on the open granulating surfaces resulting from burns. This dilemma usually has only one possible solution: grafting in two stages. In Stage 1 the open wound is closed by means of thin skin grafts, which take readily. In Stage 2 one adds the final and definitive thick skin which will contract little and which will possess the wearing qualities necessary for normal function.

IMMEDIATE TREATMENT

When first seen, the burned surfaces of the hand are treated with occlusive dressings of gauze, scantily greased with petrolatum and reinforced with fluffed dry gauze. Pressure of the encasing elastic bandage should be minimal, for we have seen positive harm result from too much pressure. When the encircling cotton bandages become moist from the discharge of serum, they shrink rapidly and may cause serious construction of the circulation of the hand.

Although we use the "open" treatment for burns in other locations (face, perineum, etc.), it seems that open treatment of burns of the hand serves no useful purpose. Occlusive dressings are more comfortable, they minimize pain in the acute stage, they protect the burned surface of the hand from mechanical injury, and they keep mouth organisms from contaminating the burn, a complication that is almost certain to occur during "open" treatment.

The burned hand is placed in the position of function, with the wrist in moderate dorsiflexion, the fingers in semiflexion at all joints, and the thumb in semiflexion and opposition. To maintain this position, a padded plaster splint is incorporated into the burn dressing. The bandaged hand is kept elevated on a pillow to minimize edema.

Having had no more than indifferent results from the extensive use of penicillin and antibiotics in the early stages of burns, we no longer use them routinely. Most patients run a daily temperature reaching 100 or 101° F., and the administration of antibiotics doesn't materially affect their doing so. A high spiking temperature usually indicates a pocket of infection which is not draining. In such cases, the removal of eschar or the use of moist dressings may be indicated.

In general, we have come to the conclusion that it is usually best to withold antibiotics until just before grafting is done. In the parlance of the cardplayer, it is best to save one's aces until they are needed. Tetanus antitoxin in minimum doses of 3,000 units should be given.

Immediate excision and grafting of burns of the hand may be theoretically desirable, but it is rarely possible since there is an insufficient depth of expendable tissue under the burn.

FIRST STAGE

The purpose of the first stage in the treatment of mangle burns of the hand is to remove slough and obtain early closure of the wound.

A. *Debridement of slough.* Mechanical debridement under general anesthesia is carried out between the tenth and eighteenth days, or as soon as demarcation of the slough becomes apparent. Next, moist boric dressings are applied to facilitate the separation of any remaining non-vital tissue and to produce a clean granulating surface as soon as possible.

B. *Application of thin grafts.* One applies thin split grafts to the raw surface on no later than the twenty-first day. Moderately thin grafts must be used because the main object of the procedure is a prompt and complete take. If thick grafts are applied at this point, a poor take will result and further grafting will be necessary.

Once the raw surface has been closed, the elmination of infection has been accomplished. The recently applied grafts now settle into position. Shrinkage soon begins, and in very thin grafts this may exceed 50 per cent of the area of the graft. On the flexor surface of the palm and fingers, in consequence, there is a gradually increasing flexion contracture. Splinting the fingers in an attempt to prevent this phenomenon does no good, and is actually harmful because splinting delays the mobilization of the finger joints, which should begin as soon as the grafts have taken firmly. Prolonged immobilization of the finger joints leads to permanent stiffening.

SECOND STAGE

The purpose of the second stage is to remove the previously applied thin grafts, thus relieving the contractures, and to provide permanent coverage with thick grafts.

A. *Excision of thin grafts and cicatrix.* After a period of weeks or months, at a time determined by the surgeon, the thin split grafts must be removed and replaced by thick split or free full-thickness grafts. In this procedure, the previously applied grafts and the underlying cicatrix are excised, and thick grafts are then applied.

B. *Application of thick grafts.* In certain cases, we have deliberately postponed the application of the thick grafts for 48 to 72 hours. The delay is definitely advantageous when the excision of previous grafts and cicatrix has been time-consuming, and when subsequent generalized oozing of blood has been difficult to control. Such oozing is fairly common in these cases because of the vascularity of the fibroblastic tissue underlying the thin split grafts during the first month or two after their application.

The plan of treatment in detail is then as follows. All previous grafts and underlying scar tissue are excised. All bleeding points are ligated with finest gauge catgut. A voluminous pressure dressing is then applied with fine-mesh gauze—either dry or very scantily vaselined—next to the open wound, and a molded plaster splint is applied for counter-pressure.

Surgery for grafting occurs from 48 to 72 hours later. Twelve hours before surgery, the dressing is saturated with 2 per cent boric acid solution or normal saline. When this dressing is carefully removed at the second sitting, a comparatively dry wound will be found, devoid of oozing and ready for grafting. Thus, a long, tedious operation is converted into two shorter procedures.

Z-plasty is a very useful procedure for use as an adjunct to skin grafting in the final definitive stage. Certain lesser contractures, especially those due to narrow bands of scar tissue, may be corrected by Z-plasty rather than by grafting. Shallow interdigital webs can also be overcome by this means.

Pedicle skin grafts are rarely used following burns of the hand, and are indicated only if there are joints, tendons or other deep structures to be

covered. Pedicle skin is often bulky, and may carry a heavy growth of hair. These disadvantages are especially pertinent in cases of palmar injury, but on the dorsum of the hand the application of a flap or tube is often a necessary preliminary to the restoration of extensor tendon function.

CASES

Case 1. C. S., a seven-year-old girl, entered Raymond Blank Memorial Hospital on December 7, 1953. She had sustained a mangle burn on her left palm in August, 1953. Flexion contracture of the fingers had gradually occurred. Examination showed marked flexion contracture involving the distal palm and all four fingers. The finger tips were a half inch from the distal palm, and there was a heavy scar in the distal palm which limited full extension and abduction of the thumb.

At operation on December 8, 1953, the cicatrix in the distal palm and on the palmar surfaces of all four fingers was removed. A thick split graft taken from the lateral surface of the right thigh was applied to the defects. The final result was excellent, with complete relief of contracture.

Case 2. P. A. P., a two-year-old boy, entered Raymond Blank Memorial Hospital on November 18, 1953. He had sustained a third-degree mangle burn of the distal palm and all fingers three weeks previously. All fingers were drawn down into the palm.

On December 15, 1953, thin split grafts were applied to the raw areas, and the take was good. On March 22, 1954, the previous grafts and the cicatrix in the distal palm and on the palmar surfaces of the fingers were excised. A thick graft was then taken from the lateral surface of the right thigh and successfully applied to the defects. On April 1, 1955, double Z-plasty was done for relief of the cicatricial web of the right thumb. The final result was very good, with relief of contractures.

Case 3. Mrs. I. M. P., a housewife 43 years of age, entered Iowa Methodist Hospital on November 6, 1952. She had sustained an electric mangle burn on her right hand in June, 1952. Initial grafting had been done elsewhere. On examination, there was moderate flexion contracture of all fingers, least in the index and most in the little finger, the middle joint of which was fixed at 90° flexion. There also was scarring in the distal palm.

On November 7, 1952, the previous grafts and the cicatrix were excised, and thick split grafts were taken from the left thigh and applied to the defects. The final result was very satisfactory. There is marked improvement of function, but slight flexion contracture is still present in the fin-

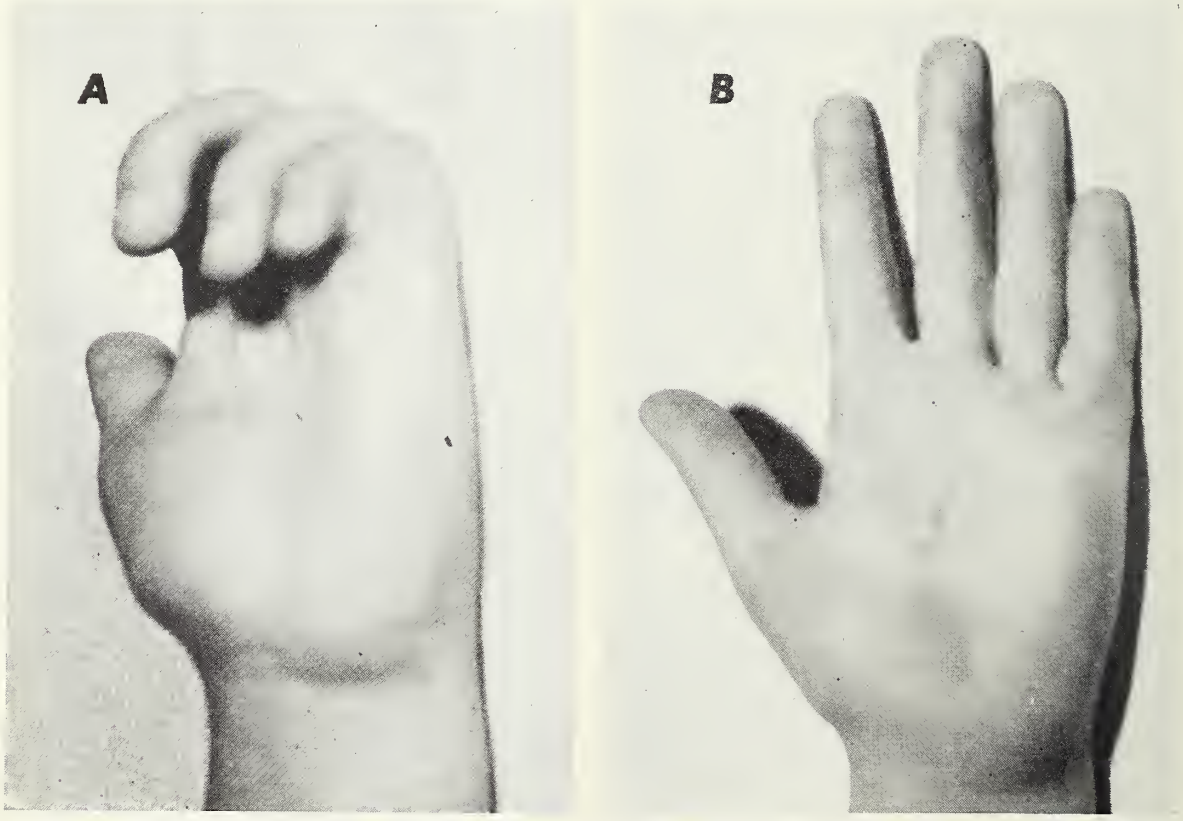


Figure 1. Case 1, C. S. (A) Preoperative photo showing flexion contracture of fingers. (B) Postoperative result.

gers, and the little one cannot be completely straightened.

Case 4. Mrs. L. W. C., a 29-year-old laundry worker, entered Iowa Methodist Hospital on October 3, 1952, with deep third-degree burns of the distal palm and all fingers from a commercial steam mangle. There was no release on the mangle, and the patient's hand was caught between the hot rollers and the "steam chest" for 10 minutes.

On examination, the tissues of the palmar surfaces were white, and all of them had a cooked appearance. The tip of the little finger was very deeply burned.

On October 10, 1952, the necrotic tissue of the palm and fingers was debrided under anesthesia. The burn was found to extend down to the flexor tendon sheaths. On October 31, 1952, thin grafts were applied to the raw surfaces, and on February 17, 1953, the thin grafts were excised and thick dermatome grafts from the lateral surface of the right thigh were applied. On May 5, 1953, the previous grafts and cicatrices were excised from the index and middle fingers, and new thick dermatome grafts from the left thigh were applied to those two fingers only. On May 9, 1953, the distal segment of the little finger was amputated because it had contracted to a hook at the distal joint. Considering the depth of the burn, one could regard the final result as satisfactory.

When seen in May, 1957, the patient had not returned to laundry work, but was doing housework. She stated that her hand has a "drawing" sensation and is sensitive to cold weather, but is very useful.

SUMMARY

Four cases of mangle burns of the hand have been reported, two in children and two in adults, and several points have been made regarding the treatment of such injuries.

1. Dressings should be of the occlusive type, with lightly greased gauze next to the skin to prevent sticking. The open method of treatment has no place in the management of burns of the hand.

2. Light compression only should be provided by the containing bandage. If pressure is too great, a second-degree burn may be converted into a third-degree one. The shrinking qualities of cotton when wet should be kept in mind. Tight encircling bandages may shrink, thus interfering with the circulation in the fingers and hand.

3. Antibiotics should be withheld or used sparingly in the early stages of burns. They should be saved for the period just prior to grafting, as aces are saved for the later and more crucial tricks in a card game.

4. Surgical treatment consists of two stages and three or four operations:

Stage 1.

A. Debridement during the third week

B. Initial application of thin grafts to close the wound, with 21 days as a deadline

Stage 2.

A. Excision of primary grafts, some weeks or months after Stage 1, and immediate application of thick split grafts at the same sitting

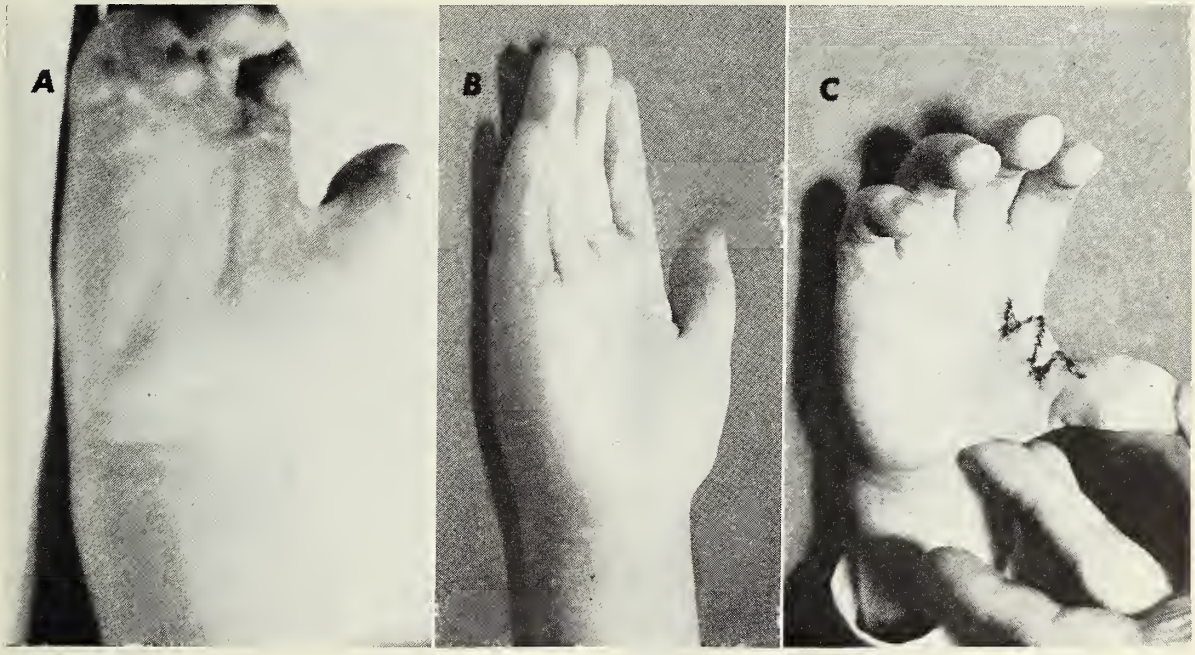


Figure 2. Case 2, P. A. P. (A) Preoperative photo showing flexion contracture of fingers. (B) Postoperative result. (C) Z-plasty on cicatricial thumb web.

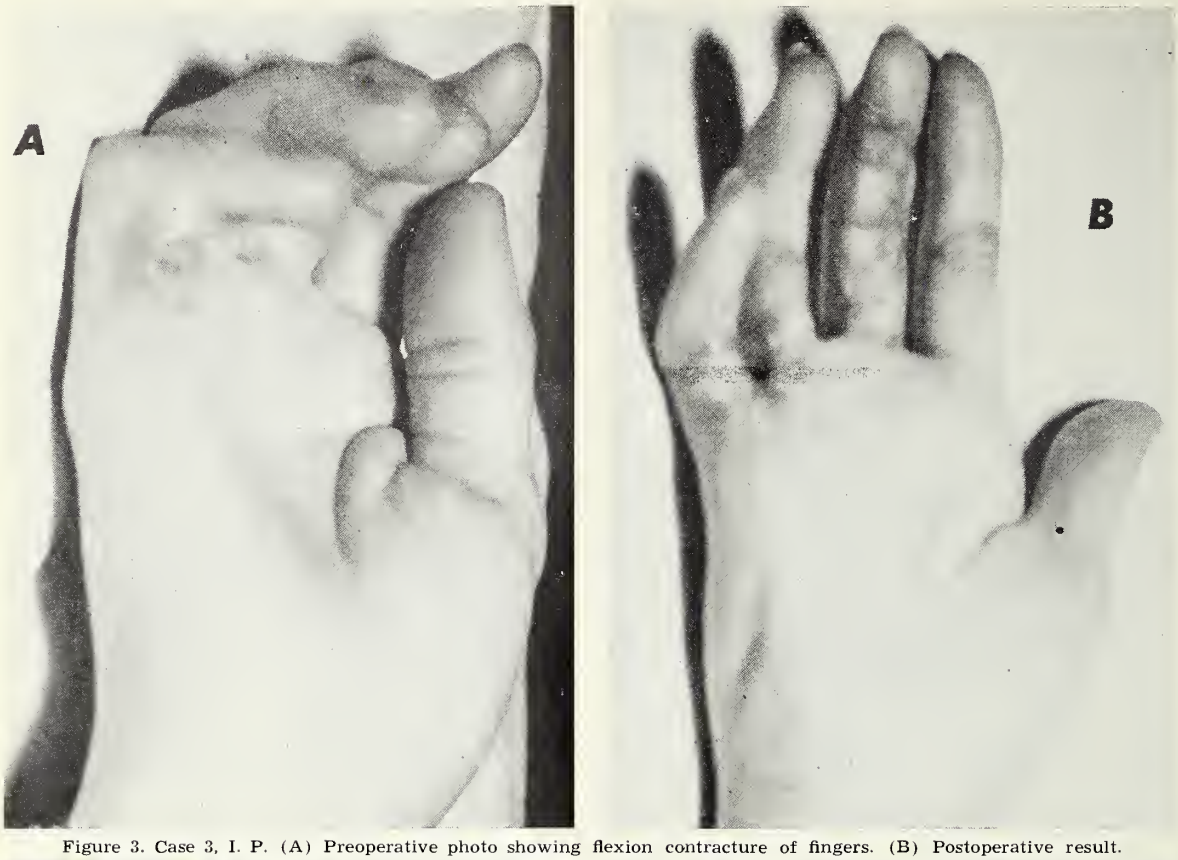


Figure 3. Case 3, I. P. (A) Preoperative photo showing flexion contracture of fingers. (B) Postoperative result.



Figure 5. Case 4, L. W. C. (C) Appearance after take of thin grafts, showing recurrent contracture of fingers. (D) Final result after application of thick grafts, hand open. (E) Final result, hand closed.

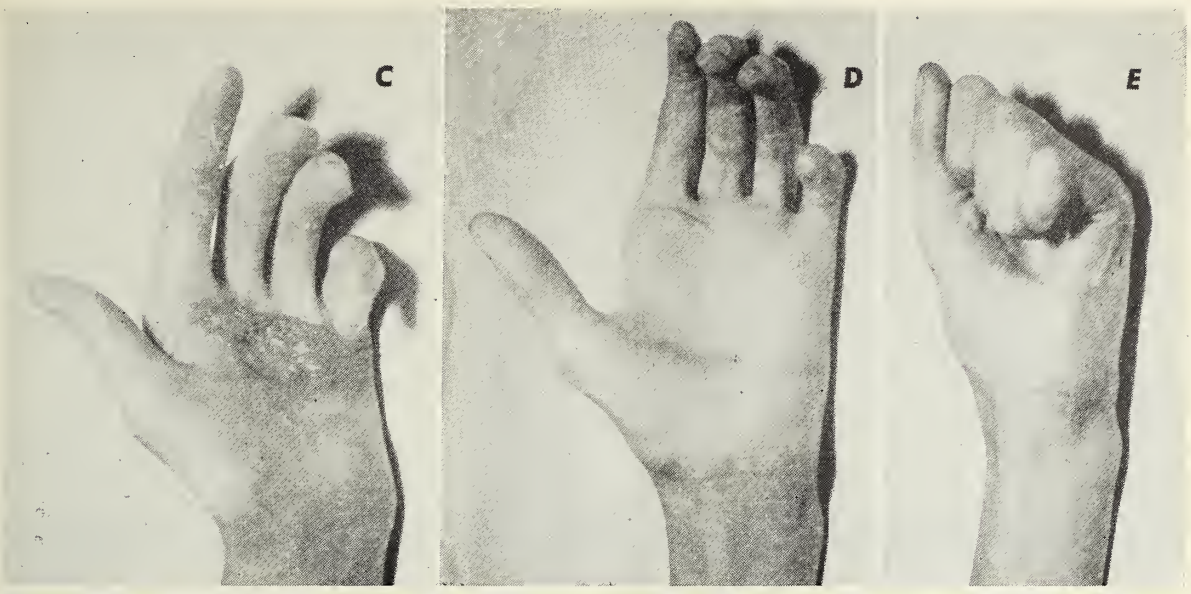


Figure 4. Case 4, L. W. C. (A) Cooked appearance of burned hand on day of injury. (B) Appearance of hand after debridement.

OR

B. Application of temporary compression dressings after excision of the thin grafts so as to permit uncontrollable oozing to subside; then final definitive grafting 48 hours later, with thick split grafts.

By the latter alternative, one lengthy operation is converted into two short ones, two days apart, and the total operating time is actually reduced.

ACKNOWLEDGMENTS

I wish to thank Dr. John Liken, of Creston, who referred Case 1; Dr. Joe M. Standefer, of Des Moines, who referred Case 2; Dr. Thomas E. Kane, of Boone, who referred Case 3; and Dr. N. M. Hansen, of Des Moines, who referred Case 4.

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Doctor, Was That Order Necessary?

Following is the substance of an editorial in the June, 1957, issue of the JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY (p. 741).

"There are a few doctors who always order a new patient into the hospital before calling on him; always have a routine half page or more of tests made, including complete blood study, gastrointestinal and x-ray series, electrocardiogram, electroencephalogram, basal metabolism tests, and so on, to an unnecessary cost of $100-$150.

"The surgeon [who brought this situation to the attention of the editor] suggested that it would pay the State Medical Society and Blue Shield to hire a high-class advertising man to teach our own members how to order laboratory and such work for our patients. The morning he talked to the editor, he had just had assigned to him a new house physician in training for surgery. He read the orders the new man had written—half a page of everything, not one of which cost less than $5, and altogether amounting to more than $100. The surgeon crossed out all but three, which he considered essential.

"The surgeon reports that this fault is not confined to young house physicians or candidates for certificate of surgery. Altogether too many referred cases on almost every call have much too many unimportant and needless orders.

"He suggests a large placard over each record desk reading: 'DOCTOR, WAS THAT ORDER NECESSARY?' "

Some Considerations in

Corrective Rhinoplasty

CHESTER C. WOODBURN, JR., M.D., AND BYRON M. MERKEL, M.D.

DES MOINES

WHEN DR. BIERRING first opened his office for the practice of medicine, a person whose nose gave him a normal sense of smell and an adequate airway had to be satisfied with it, regardless of its appearance. In those days function was all that mattered. A nose was a nose.

Not so, today!

The young lady at the left in the accompanying illustration is likely to be satisfied with the appearance of her nose, but the other two young people are almost certain to feel that they have been the victims of misfortune and are quite apt to want something done to improve their looks. And well they may, for the fulfilling of such desires has become rather routine.

In the past two decades, since the control of infection became adequate, the modern otolaryngologist has been able to devote more of his attention to the problems of corrective and reconstructive surgery. In that length of time, much new knowledge has been gained regarding nasal function and esthetic appearance. Furthermore, rhinoplastic experience is now broad enough to emphasize certain generalizations regarding the principles that are involved.

1. *Rhinoplasties are not always for the purpose of beautification.* More frequently, the operation is performed to minimize a nasal deformity. The patient is thus given the same chance to enjoy the opportunities of life that have been the birthright of his more normal counterpart. He is evaluated as to his motivation for seeking help, and he is selected carefully, since it is necessary that the surgeon weed out neurotic or psychotic persons who misguidedly blame all of their failures on their physical defects.

2. *The contour of the nose should never be improved at the expense of function.* It is important for us to remember that in addition to housing the olfactory receptors, the nose warms, moistens, filters and controls the pressure, distribution and volume of air that enters the body. Any nasal operative procedure must maintain or improve those functions. Practical experience has shown that skilfully performed rhinoplasties usually do a great deal to improve them.

3. *The appearance of the patient's reconstructed nose will be limited by any deficiencies in the imagination and creative ability of the rhinologist.* Cosmetically, the nose will be no better than the one that the rhinologist has in mind for him, and if the rhinologist has little of the artist in his make-up, the degree of his corrective failure will be directly proportional to his creative deficiency.

4. *The reconstructed nose must look natural.* The avoidance of an artificial appearance has been one of the major contributions to rhinoplasty in recent years. Despite its prominent location, the ideal nose should be inconspicuous, forming an equilateral triangular pyramid in the vertical facial midline and harmonizing with the general configuration of the face.



5. *A stereotyped rhinoplastic result is to be avoided.* By itself, removal of a hump, narrowing of the pyramid or shortening of the nose frequently leaves much to be desired. Although corrective rhinoplasty is essentially an operation on the nasal skeleton, careful attention must be given to the mucosal, subcutaneous and dermal components of the pyramid. The rhinologist strives to make the nose proportional to the face, with bilateral symmetry and nostrils of proper size, shape and direction.

6. *The operative result is restricted by the limits to which the soft tissue can contract or stretch over the newly-formed skeleton.* Very large noses cannot be made into very small ones. When an excessive amount of skeleton has been removed, the skin tends to bunch up, particularly over the lower cartilaginous vault where the skin is thickest. Thus, one creates a soft-tissue blob, unless he anticipates this complication and takes steps to prevent it.

On the other hand, when an implant is used to camouflage a saddle defect, one must sometimes attain the desired projection of the pyramid in stages, so as not to overstretch the skin and cut off its blood supply. When the rhinologist uses grafts, he must implant them without attempting to wedge tissue, for various weird deformities result when tissue is held in tension.

7. *When the lobule is large, its weight tends to exert continual traction on the soft tissue so that the tip frequently drops postoperatively, gradually lengthening the nose.* One can sometimes overcome this problem by over-shortening. Since it is difficult to predetermine how much the overshortened nose will lengthen, it is usually better to create broad intranasal scars to prevent lengthening. Fibrotic tissue is inelastic, and its formation will help prevent the occurrence of more tip drop than is desirable.

8. *When it is necessary to remove the hump from an overly projecting pyramid, the triangular cross section of the nose is converted to a trapezoid.* The nasal profile thus is satisfactory in appearance, but from the frontal view, the nose is broad and flat. After hump removal, therefore, the nasal pyramid must be narrowed if the triangular arch is to be restored. After the nose has been narrowed, the healing process tends to widen the nasal bones once more if proper measures are not taken, but one can frequently circumvent this difficulty by setting the nasal bones inside the frontal processes of the maxillae.

9. *Tissue conservation helps to prevent excessive contracture during healing, generally permitting better nasal contours.* Where possible, one should reassemble and reposition the skeletal components, rather than excise them. By this means, nasal physiology will be less greatly disturbed during healing.

10. *In cases of deformed septum, some septal reconstruction is required to permit improvement of the airway and to facilitate midline restoration of the pyramid.* The ventral portion of the nasal septum is a structural member providing support for the inferior two-thirds of the nasal pyramid. If both the septum and the pyramid require major reconstruction, it is sometimes desirable to correct these deformities in two stages, and usually it is best to perform the septal surgery first.

11. *The healing abilities of patients differ widely.* Thus, despite meticulous postoperative care, the healing factor cannot adequately be controlled. On this account, revisions are occasionally desirable because the immediate postoperative appearance of the nose is not necessarily the final result.

SUMMARY

Some fundamental principles of corrective rhinoplasty have been enumerated. Particularly in the past 20 years, important strides have been made in understanding the complexities of nasal function and proportion. As more knowledge is gained, functional and esthetic values are becoming inseparably intertwined, for all deformed noses can be improved esthetically, and this improvement enhances the nasal airway.

Now that nasal deformities can be minimized, the patient who has such a handicap certainly should be relieved of it, especially since he has to give so little in time and discomfort in return for permanent improvement. There are, of course, numerous beneficial side effects from such surgery. After acquiring a better personal appearance, and an accompanying increase in self-confidence, patients frequently achieve social and commercial successes which they may never before have thought possible. Thus, by creating a normal facial contour for the patient, the rhinologist confers inestimable benefits upon him.

This work is most challenging and indeed fascinating, for it taxes the rhinologist's creative ingenuity. The patient cannot put a cover or wear clothes on his nose, and since the doctor's work is ever on display for all the world to see, the penalties for anything other than complete success are severe. But the satisfaction that the surgeon can take in a job well done is comparably great, for it is a constructive surgical accomplishment. He hasn't merely made his patient "as good as new"; he has actually improved upon Nature.

Rhinoplasty is all the more interesting because it represents a concrete constructive surgical accomplishment. These patients, like obstetric ones, have something new to take home with them. Because they are so gratified the rhinologist continues to look forward eagerly to the correction of each new patient's nasal deformity. Modern rhinoplasty is indeed one of the "new looks" in the medicine of today.

Extensive Paralysis From Protruded Intervertebral Discs in the Lumbar Area

A Report of Two Cases

H. G. DECKER, M.D.

DES MOINES

THOUGH SEVERAL authors[1, 5, 6, 8] have reported weakness or even foot drop as a consequence of protrusions of lower lumbar discs, we have seen only two cases of serious incapacitating paralysis in the 500 or more such cases that we have operated upon. It is the purpose of this presentation to record them.

Kennedy, Hyde and Kaufman,[4] Peet and Echols,[9] Schneider,[10] and French and Payne[3] have previously reported such cases. Dandy[2] has reported a case in which an extruded loose piece of cartilage at the lumbar level simulated a cord tumor. The case of Middleton and Teacher,[7] which has often been referred to, is a classic example of the result of cauda equina compression resulting from the extrusion of a disc in the lumbar dorsal region.

It is obvious, however, that such an occurrence is relatively rare. The incidence has been less than 0.4 per cent in our series, and thus, it is little more than a possibility for one to keep in mind when he is making a differential diagnosis. Yet, regardless of such statistics, the affliction is of supreme importance to the individual who suffers from it.

CASES

Case No. 1. When first seen on November 7, 1949, G. R., a 50-year-old white packing-house worker, referred by Dr. George Finch, complained of pain in the lower back and right hip, and numbness of the left foot. He stated that on about November 1, 1949, while bending over to lace his shoe, he had first felt the pain, and that his subsequent coughing had, as he phrased it, ". . . almost torn me in two." Until seen again three days later, he remained in bed and applied heat to the painful areas. At the second interview, he complained of weakness in both lower extremities. In addition, he had not been able to have any erections for the past two or three days.

The physical examination showed a loss of ankle jerk bilaterally, but the knee jerks were both obtainable. There was analgesia of the S-1 L-5 dermatomes bilaterally, and the S-2 S-3 and the S-4 S-5 dermatomes showed hypalgesia. He had weakness of extension of toes and feet bilaterally. He also was unable to pass his urine and had a relaxed anal sphincter.

The patient was admitted to Mercy Hospital, Des Moines, three days later, and a lumbar puncture and subsequent myelogram were carried out. The puncture done at L-5 S-1 showed xanthochromic fluid, with 13 cells and a total protein of 750 mg. per cent. A myelogram showed that dye would not descend below the upper limit of L-4. Plain films of the sacrolumbar area were normal.

On November 16, 1949, a laminectomy was carried out, and the spinous processes of L-3, L-4 and L-5 were removed. There was pulsation of the dura above L-3, but not below it. A large, almost completely extruded disc was found between L-3 and L-4.

Following that procedure, the patient's pain gradually receded, he regained control of his bladder and could walk with a slightly slapping-foot gait. But by June 6, 1950, he still had some weakness as regards the extension of his left foot. The right ankle jerk was decreased, and the left one was absent. There was also some weakness of extension of both great toes. He had hypalgesia of the S-1, 2, 3, 4 and 5 dermatomes on the left, and the S-1 dermatome on the right. By July, 1950, he had returned to limited employment, and when last seen, in July, 1955, though he still had some hypalgesia of the left lower extremity and had no left ankle jerk, he walked without much difficulty. Urination was giving him no trouble, and he did not camplain of any difficulty as regards erections.

Case No. 2. When I first saw E. H., a 39-year-old married white woman, on September 2, 1951, upon the suggestion of Dr. Maurice Rotkow, she complained of numbness in the back of the thighs, running down into the legs and feet, and an inability to retain urine. She had first noticed some numbness in her right leg four days earlier, and later had had numbness and pain in the back and in both buttocks, probably more on the right than on the left. She had received some relief from Empirin Compound and B-12 injections, but her pain had become progressively worse, and she had required injections of Demerol on the day before she was referred to me. She had never had any pain with coughing, sneezing or straining, and she believed, at the time I first saw her, that her pain was less severe than it had been.

Examination revealed absence of the right ankle jerk and a decreased left ankle jerk. Both knee jerks were present and active. The posterior aspects of both thighs were markedly hypalgesic to

analgesic, all of the dermatomes from L-5 and S-1 to the lower sacral ones being affected. She constantly dribbled urine, and had had marked weakness in the extension and flexion of the toes and feet bilaterally.

On September 5, 1951, x-rays of the patient's dorsal lumbar spine at Iowa Methodist Hospital showed no evidence of narrowing, but did show some sclerosis around each sacroiliac junction, though there was no evidence of any bone destruction. An immediate myelogram and subsequent surgery were advised, but the patient and her family procrastinated. On September 6, 1951, a pantopaque myelogram revealed a blockage of the downward flow of the opaque medium between L-4 and L-5. The neurologic findings remained unchanged except that the patient had by then lost all tone in the anal sphincter. The spinal fluid revealed 75 mg. per cent protein and eight lymphocytes.

On September 8, 1951, a laminectomy was carried out to include the spinous processes of L-3, L-4 and L-5. Just below the lower limit of L-4, one could see that the dura was pushed back, and rising up from the right side there were frayed-out portions of extruded nucleus pulposus. It was almost entirely out of the interspace and lying free in the epidural space.

The patient was discharged from the hospital on September 19, 1951, and by that time was able to control her urine, but had relative analgesia of the saddle area. Neither ankle jerk could be elicited, and there was also weakness of extension and flexion of the feet. By November 13, 1951, she had some hypalgesia of the right saddle area, and that region showed few if any sensory changes. The left ankle jerk could be elicited, but the right one was still absent. She walked with only a slight limp. She later consulted a urologist because of some urinary frequency, and that difficulty responded to treatment. When last seen, on March 14, 1955, she walked without difficulty, but still had some slight sensory changes in the right saddle area.

I have subsequently observed both of these patients walking on the street, and to all appearances they were doing quite well.

Although such complications of protruded discs may be infrequent, VerBrugghen[11] found nine cases of massive extrusions of lumbar intervertebral discs among 300, and pointed out the serious difficulties that can occur when adequate treatment is not instituted. He also stated that recovery after relief of compression is by no means entirely satisfactory. One of his patients died; one remained paraplegic; and one was incontinent. He considered one result excellent, one good, and four fair.

By means of iodized oil, Dandy[2] discovered two cases showing complete block in October, 1929, and both of them, he stated, had good recoveries.

We perhaps were fortunate in obtaining satisfactory recoveries in both of our cases.

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B_{12} EXCRETION INDICATES LIVER STATUS

It has previously been reported that in a series of cases of acute hepatitis and cirrhosis of the liver, the serum levels of vitamin B_{12} were very high, and that they decreased to normal as jaundice subsided.[1] These phenomena seemed to show an additional plasma binding of the vitamin in liver disease. The stores of B_{12} in the diseased liver were apparently reduced, thus accounting for the elevated serum levels of bound B_{12} in the presence of hepatic disorder.

Using the assay technic that they had previously developed,[2] Baker *et al.* carried out vitamin B_{12} excretion studies on 23 individuals.[3] From time to time, patients with liver involvements were given 50 μg. of vitamin B_{12} intramuscularly, and the results showed increased absorption and lower excretion than normal. As each patient's condition returned to normal, his excretion rate improved, indicating that his liver was regaining its ability to store the vitamin.

The three normal individuals in the test group each excreted from 24 to 40 μg. of the dose, but with the exception of some who were convalescing, none of those with hepatic disease excreted more than 10 μg. It was observed that some patients who seemed clinically to be convalescent still failed to excrete normal quantities of B_{12}, thus indicating that the test is useful as an objective measurement of recovery.

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Penicillin Anaphylaxis

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DES MOINES

The incidence of serious penicillin reactions has been increasing since the initial reported death in 1946. With over 400 TONS of penicillin being used annually, the number of serious penicillin reactions is relatively few; however, the seriousness of the recent reactions should make each physician aware of the dangers when penicillin is used. For the first few years of penicillin therapy, reactions were considered minor. Only two deaths were reported through 1949.[1, 2] In 1952 and 1953, during an 18 month period, there were 15 reported cases of fatal anaphylactic reactions.[3-10] Now it is uncommon to talk to a physician who does not know of a fatal or near-fatal anaphylactic reaction to this drug.

The earliest reported cases of penicillin reactions followed the intramuscular use of the drug. In 1951, two non-fatal cases of acute anaphylactic reaction occurred immediately after the instillation of penicillin into the sinuses.[11] There is at least one case of death occurring immediately after intrathecal instillation of penicillin.[12] By 1953, Feinberg and his group had gathered a total of nine cases of fatal and non-fatal anaphylactic reactions.[10] The number of reported cases now is so great that case reports are of little value. In Des Moines, Iowa within the last three years there were at least four known deaths immediately following a penicillin injection. There was one near-fatal reaction following the inhalation of penicillin powder.

Many physicians have felt that the administration of penicillin by mouth would avoid the severe type of reaction, but in 1952, a patient had an anaphylactic shock following the ingestion of a penicillin tablet.[12] By March, 1956, there had been at least 11 cases of fatal or nearly fatal reactions following the use of oral penicillin,[6, 13-17] and three additional cases were reported in June of that year.[18] It is obvious, then, that there is an increasing frequency of serious reactions even from the orally administered drug. Undoubtedly these reported cases are only a small percentage of the actual number that have occurred. The symptoms following the ingestion of a tablet are the same as those following an injection. In some cases, the penicillin tablet was not recognized as the cause of the symptoms, and the reaction occurred on more than one occasion before penicillin was suspected.

SYMPTOMS AND FINDINGS

The symptoms are terrifying to both the physician and the patient. A reaction may occur within minutes, and sometimes within seconds, after the drug has been given. Common early symptoms are tingling of the lips, tongue or extremities. Dizziness, nausea and vomiting may occur. Severe urticaria is a frequent accompaniment. In the more severe reactions, the patient may experience difficulty in swallowing and may have a tightness in the chest, with associated wheezing and dyspnea. Unconsciousness, convulsions and death, in some instances, have occurred within two or three minutes. There may be a tachycardia, and the blood pressure is low or sometimes unobtainable. Cyanosis is a frequent finding. The earlier the symptoms occur, the greater is the likelihood of a fatal outcome. Many of the reactions have been so sudden that death occurred before the proper drugs could be given.

PREVENTION OF REACTIONS

Although reactions cannot be completely avoided, some suggestions can be given for decreasing their incidence.

1. It is worthwhile to take a very careful history as regards allergies, for many fatalities have occurred in patients who have had hay fever, asthma or eczema. A negative history, however, does not rule out the possibility of a serious reaction.

2. The patient should be questioned carefully for any evidence of previous reactions to penicillin. The more common delayed serum-sickness type of reaction is frequently the precursor of the anaphylactic type of reaction. The patient's report that he has had no difficulty following previous injections does not assure the physician that a reaction will not occur. In fact, previous injections tend to sensitize the patient. But it is intermittent injections that are most likely to sensitize him seriously. If a reaction does not follow the first of a series of daily injections, a serious one is unlikely to follow a later injection.

3. Penicillin should be avoided when it will be of no value, as in the treatment of a common cold or another of the virus infections. It should not be used routinely in the preoperative and postoperative care of non-infected surgical patients. Penicillin should be avoided in patients who are unconscious or anesthetized, for the allergic symptoms in such situations may be completely masked.

4. Penicillin should not be given unless adrenalin is available for immediate use.

5. Penicillin should be given in the upper, lateral aspect of the arm, so that a tourniquet can be applied above it if necessary. The patient should be instructed to remain in the office for at least 15 minutes after the injection.

6. No type or form of penicillin can be given safely if the patient has been seriously sensitized. Experience has revealed that these patients have been sensitized to other forms of penicillin as well as to penicillin G.

7. Penicillin-sensitive patients should avoid the many drugs which contain penicillin as one of their ingredients. Poliomyelitis vaccine contains a small amount of penicillin. Some reports indicate that fears of reaction from this source are unfounded.[20] According to the information furnished by the producers, the vaccine contains less than 100 units of penicillin per cubic centimeter, and actually the concentration is probably less, for on biologic assay the vaccine has been found to contain from one to 15 units of penicillin per cubic centimeter. The vaccine produced by one company contains a maximum of 0.003 units per cubic centimeter, an amount which the average patient could tolerate without difficulty.[21] However, it is possible that a reaction could occur even to this material.

8. Penicillin skin tests are of limited value. If testing were a practical procedure in all cases, some anaphylactic reactions would be avoided. When the skin test is positive, an anaphylactic reaction will probably occur if the penicillin is given. Negative tests, however, do not assure the physician that there will not be a dangerous reaction. Unfortunately, severe reactions have occurred immediately following the skin test itself.

It should be emphasized that cutaneous (scratch) tests must always be performed prior to the use of the intracutaneous method. The recommended dosage for cutaneous tests varies from 5,000 to 300,000 units per cubic centimeter (average 50,000 to 100,000 units) of freshly prepared aqueous penicillin. An intracutaneous test should be preformed with only 0.01 to 0.02 cc. of a solution containing between 100 and 1,000 units of penicillin per cubic centimeter. Subsequent tests with stronger concentrations, up to 5,000 units per cubic centimeter, may be done, provided that the previous tests have all been negative. It must be emphasized that even in competent hands, severe reactions have followed skin testing. In one reported case, an anaphylactic reaction followed intracutaneous testing with material diluted to contain only 0.00003 units of penicillin per cubic centimeter.[22] If the patient has had an anaphylactic reaction, skin testing should be avoided.

9. Penicillin packs, ointments, troches and drops should not be used.

10. Information indicating serious sensitivity to penicillin should always be available to the doctor. If the patient carries this information in a billfold or a pocketbook, and then is rendered unconscious in an accident, the physician may never see it. For that reason, patients have been advised to obtain identification tags on which to carry that information. On a presentable neckpiece procurable at a jewelry store, the message "I am dangerously allergic to penicillin" can be inscribed, and this warning, plus additional information in the billfold, will serve both to protect the individual and aid the doctor.

TREATMENT OF PENICILLIN REACTIONS

When a penicillin reaction has occurred, the most important feature of the treatment is that it be immediate! The physician must keep the proper syringes and drugs available for use at all times. The following suggestions should be followed if the patient complains of any of the symptoms that have been described.

1. A tourniquet should be applied above the site of the injection, if possible.

2. Epinephrine (1:1,000 aqueous solution), given subcutaneously in doses of 0.5 to 1.0 cc., is the drug of choice, and it should be repeated if the patient does not respond within a few minutes. In a desperate situation, these drugs should be given intravenously.[10]

3. Antihistamines should be given intravenously. Benadryl or Pyribenzamine (25 to 50 mg.) or Chlor-trimeton (10 to 20 mg.) may be given. (Use only material labeled for intravenous use.)

4. Aminophyllin (0.25 to 0.5 Gm. in 10 cc. intravenously) will be especially helpful if marked wheezing and dyspnea are present.

5. Hydrocortisone in 100 mg. doses should be given intravenously as soon as possible. As an emergency procedure, the usual contraindications or side effects need not be considered, for this may be a life-saving procedure.

6. If cyanosis is present, oxygen should be used.

7. If shock is prolonged, plasma or blood should be given. Norepinephrine can also be used to maintain blood pressure.

SUMMARY

Penicillin reactions can be serious, and frequently are fatal. The incidence is markedly increasing as more patients are being sensitized to the drug.

There is no safe way of giving penicillin to an anaphylactically sensitized patient.

Symptoms of anaphylaxis are immediate and severe, when they occur.

All precautions should be used to avoid reactions. Patients suspected of being sensitized should not be given penicillin.

It is imperative to have proper medications available for the control of serious reactions when penicillin is being used.

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Atypical Tuberculous Cervical Lymphadenitis in Children

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DES MOINES

TUBERCULOUS CERVICAL adenitis due to virulent strains of tuberculosis has almost completely disappeared from urban medical practices where the pulmonary tuberculosis rate has a very low incidence. But in the past 2½ years, material has been collected from five cases of atypical tuberculous cervical adenitis in children, where the etiologic agent appears to have been an atypical, chromogenic, acid-fast organism of relatively low virulence.

This material was obtained from five children with cervical adenitis, all of whom presented no antecedent history that might have related the origin or symptomatology to a pyogenic process. The findings on these five children are summarized in Table 1. All of these children had positive Mantoux tests when they presented, except Case 2, whose Mantoux test converted to positive shortly after the tuberculous cervical adenitis was incised and drained.

TABLE 1

CERVICAL LYMPHADENOPATHY FROM ATYPICAL ACID-FAST BACILLI

Patient	*Age*	*Culture*	*G. Pig*	*Mantoux*	*Tissue Diagnosis*
1. D P	5 yr.	Chromogen	Neg.	Pos.	Tuberculous lymphadenitis
2. J J	2 yr.		Neg.	Pos.	Tuberculous lymphadenitis
3. J B	1 yr.	Chromogen	Neg.	Pos.	
4. J S	2 yr.	Chromogen	Neg.	Pos.	Tuberculous lymphadenitis
5. C N	6½ yr.	Chromogen	Neg.	Pos.	

The organism obtained by culture from four of the five cases was a very unusual chromogenic, acid-fast organism canary yellow in color. The colonies were moist and non-granular, and grew on the routine acid-fast media. The growth on Petragani's media required approximately the same time and growth conditions as virulent human tubercle bacilli do. Inoculation of these cultures of chromogenic, acid-fast bacilli into guinea pigs failed to produce tuberculosis.

At the time of the incision and drainage, or excision of these lesions, material was obtained for inoculation into guinea pigs. None of the tissue obtained from the cervical lymph nodes produced tuberculosis in the guinea pigs. Hence, the cultural criteria and animal virulence criteria for virulent Mycobacterium tuberculosis were not fulfilled, although the children showed positive tuberculin tests.

Subsequent to treatment, two of the cases developed draining sinuses which were not influenced by isoniazid and paraminosalicylic-acid therapy.

Table 2 correlates the findings in each case with the patient's x-ray and history of family contact. No positive source of contact has been established. There has been tuberculin testing of siblings of three of the children, and all results have been

Dr. Green is pathologist at Iowa Methodist Hospital and Raymond Blank Memorial Hospital. He wishes to acknowledge the technical assistance of Clarence Grosz, B.S., to express his thanks to Drs. Charlotte Fisk, John Gustafson, T. D. Throckmorton, R. B. Stickler, Carlton Van Natta and Robert Updegraff for the use of their clinical records and follow-up data, and to thank Dr. Richard F. Birge for one of the chromogenic cultures that he studied.

negative. None of the patients have developed any other systemic evidence of tuberculosis, except for presenting lymphadenitis. The histologic diagnosis of the tissue removed is shown in Table 1. This could not be differentiated from ordinary tuberculous lymphadenitis, and acid-fast organisms were frequently demonstrated in the fixed tissue sections.

TABLE 2

CERVICAL LYMPHADENOPATHY FROM ATYPICAL ACID-FAST BACILLI
Relation of Skin Test, Chest Film and Contacts

Patient	*Age*	*Chest Film*	*Mantoux*	*Familial Contacts*
1. D P	5 yr.	Neg.	Pos.	No
2. J J	2 yr.	Neg.	Pos.	No
3. J B	1 yr.	Neg.	Pos.	No
4. J S	2 yr.	Hilar calcification	Pos.	?Father's Family
5. C N	6½ yr.	Neg.	Pos.	No

In order to establish the prevalence of this atypical chromogenic organism among the total number of acid-fast organisms isolated in the laboratory, the material from the previous two years has been studied and summarized (Table 3). It is evident that the atypical organisms have been isolated

TABLE 3

CULTURES FOR ACID-FAST BACILLI OVER A TWO-YEAR PERIOD
Total Cultures for Acid-Fast Bacilli—700

Positive Culture for Tuberculosis:		*Positive Cultures for Chromogenic Acid-Fast Bacilli:*	
Sputum	8	Cervical Lymphadenitis	4
Gastric Washings	6	Sputum	2
Skin Abscess	2	Bronchial Washings	1
Lobectomy	2	Urine	1
Bronchial Secretion	2		
Urine	1		
Hip	1		
Endometrium	1		
Neck Abscesses	1		
Total	24	Total	8

from other sources, as well as from the cervical lymph nodes, but the other cases were not so thoroughly studied. It is also evident from Table 3 that this organism is relatively prevalent in comparison with the total number of positive acid-fast cultures obtained.

The table does not include organisms which have the obvious characteristics of acid-fast saprophytes and which are encountered fairly frequently in a diagnostic bacteriologic laboratory.

DISCUSSION

Infection from an atypical, chromogenic, acid-fast organism has been reported recently by two other groups who studied lymphadenitis in children. One of them[16] reported eight cases which were considered to be non-tuberculous cervical adenitis in that the organisms were considered saprophytic, rather than true pathogens, as a result of their failure to infect guinea pigs.

Prissick and Masson [7, 8] have reported 10 cases of cervical lymphadenitis caused by a chromogenic organism which they felt was a different species of Mycobacterium. They proposed the name *Mycobacterium scrofulaceum* for this new species.

The morphology, cultural characteristics and virulence of the pigment-producing acid-fast strain have been extensively studied.[5, 6, 7, 8, 9, 11, 12, 13, 14, 16, 17, 18, 19, 20] The studies indicate almost complete lack of pathogenicity for the guinea pig.

The chromogenic acid-fast bacillus which is non-pathogenic for the guinea pig is capable of producing progressive human disease in addition to producing cervical adenitis. Wood, Buhler and Pollak[20, 1] have reported a total of 17 cases with chromogenic acid-fast bacillus infection. All 17 had lung lesions, but four of them had other systemic involvements, including genitourinary, splenic, skin and choroidal. A total of six of these reported cases died, and in five of those six chromogenic infection was proved at autopsy. Other cases of human infection with the chromogenic acid-fast organisms have been reported.[4, 5, 15, 19]

Although it has been proved to produce human disease, the chromogenic Mycobacteria have not produced consistently fatal disease in the Rhesus monkey. These organisms have been shown to have limited pathogenicity, and the resultant self-limited disease usually underwent spontaneous regression.[10]

The non-saprophytic acid-fast strains that are non-pathogenic for the guinea pig are not all chromogenic. There have been descriptions of isoniazid-resistant strains of tubercle bacilli from human sources which produced no progressive lesions in guinea pigs.[3] Lesions regressed spontaneously. There are also non-chromogenic guinea pig avirulent strains of atypical acid-fast bacilli which have been shown to produce progressive and fatal disease in man.[3]

The problem of differentiating virulent from non-virulent or saprophytic Mycobacteria is not new. Pinner[5] reported on atypical acid-fast organisms from human sources in 1935. The reported organisms, which were isolated from sputum, urine, gastric lavage and bone, produced chromogenic colonies on culture media. The colonies ranged in color from lemon yellow to dark orange. Animal inoculation studies resulted in benign and self-healing lesions that could be differentiated from virulent tuberculosis.

CONCLUSIONS

From the cases reported as well as from the material which has been reviewed, it is evident that the chromogenic acid-fast infections in man definitely produce disease, although they are non-pathogenic for the laboratory animals which usually establish the criteria for virulence.

The atypical acid-fast infections resulting in cervical adenitis seem consistently to be benign processes, with no obvious secondary infection in other

sites. Because of the low rate of contagion evidenced by the lack of positive tuberculin tests in siblings, and because of the lack of evidence of contact with tuberculosis in the environment, the pediatrician may be faced with a serious decision as to how to manage these children. It is obvious that they are infected with a pathogenic organism which produces a definite lesion. The question that he must answer is whether to regard the case as constituting virulent human tuberculosis, or whether to look upon it as an infection by an acid-fast organism which, though its virulence is as yet unknown, seems to produce no more than a self-limited illness when the symptomatology is that of cervical adenitis.

Since after surgical intervention some of these children develop draining sinuses that do not respond to chemotherapy, some consideration should be given to the problem of protecting other members of their families and their schoolmates.

It would appear that though these organisms are pathogenic in the sense that they produce lymphadenitis in children and under some circumstances can produce progressive and even fatal disease, they have not thus far been shown to have serious prognostic significance. Thus, these children probably do not need to be isolated from their siblings and other youngsters.

The source of these atypical, acid-fast infections must be sought out. Certainly it is in the environment.

It is essential that material from all cases of cervical adenitis in children suspected of being tuberculous be cultured on media for acid-fast organisms, as well as injected into guinea pigs. Only by that means can we identify the strains of Mycobacteria that are avirulent for those animals.

SUMMARY

Five cases of atypical tuberculous cervical adenitis in children have been reported. The organisms recovered from four of these five cases produced colonies of canary-yellow color on routine Mycobacterial culture media, and grew at the same rate as virulent tubercle bacilli. None of these organisms were capable of producing lesions in guinea pigs. Inoculations of material from the cervical adenitis, though microscopically characteristic of tuberculous lymphadenitis, also failed to produce infections in guinea pigs.

This group of organisms has been shown by other authors to produce progressive human disease as well as localized cervical adenitis.

Their pathogenicity under most circumstances can probably be thought of as moderate, but they should not be regarded as acid-fast saprophytes.

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Carcinoma of the Cervix at Iowa Methodist Hospital

A Five-Year Survival Study of Cases Treated in 1946 Through 1951

PARKER K. HUGHES, M.D. AND RICHARD M. MOORE, M.D.

DES MOINES

THE EVERYDAY PRACTICE of medicine by a diverse group of men is likely to improve very slowly unless they make frequent attempts to measure the results that they are obtaining. In the past decade, Iowa Methodist Hospital has become an important medical center, and it is the impression of the majority of us who are associated with it that the highest quality of medicine is practiced there. But an impression is not enough; evaluations are necessary if desirable standards are to be maintained.

Carcinoma of the cervix is the second most common malignancy occurring in females, and the most common gynecologic malignancy. It is estimated that in the United States each year, 35,000 women die of cervical cancer. Treatment for this condition has improved tremendously during the past 20 years, but a great deal has yet to be learned about it, and much progress must yet be made.

TECHNICS USED IN OUR STUDY

With these facts in mind, we undertook a review of the cases of carcinoma of the cervix treated at Iowa Methodist Hospital during the years 1946-1951, inclusive. That period was selected in order that a five-year survival rate could be computed for all of the cases in the series. Because evaluation of the cases of only one or a few doctors might have led us to an erroneous conclusion, it was our original intention to make our series include all of such cases admitted to the Hospital during the period that we had chosen. But during our review of all of the case records—approximately 110 of them—that had been coded "carcinoma of the cervix," we discovered some erroneous diagnoses. Some cases were carcinoma of the body of the uterus, and several were carcinoma *in situ*. When we had eliminated them from the study group, we were left with the records of 82 bonafide cases of carcinoma of the cervix that had been treated in the Hospital during the years previously mentioned.

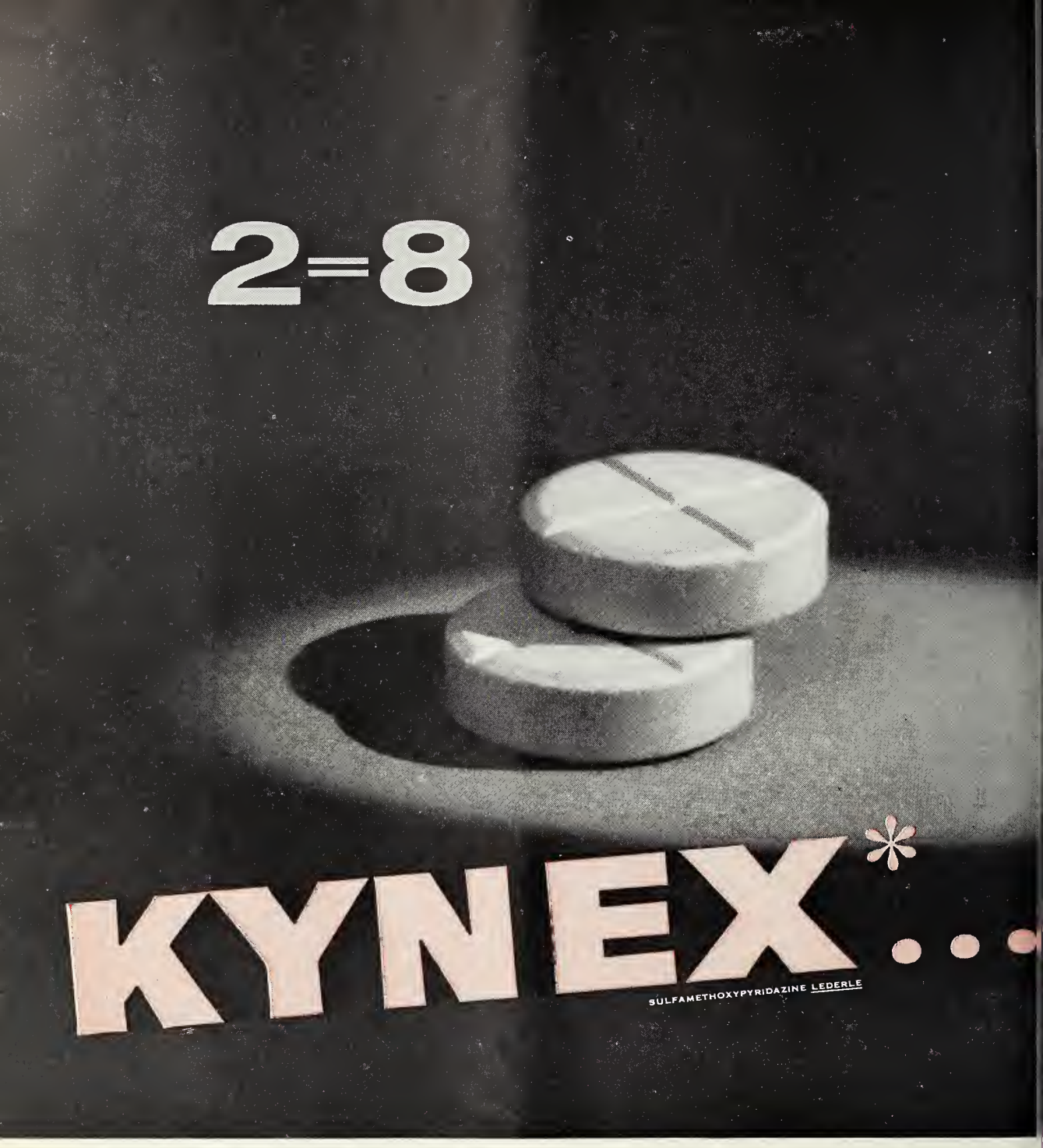
The hospital charts of these 82 patients were reviewed for the following data: (1) age of the patient; (2) year treated; (3) duration of the patient's symptoms prior to treatment; (4) length of the lapse between the time the patient was first seen by the doctor and the time when treatment was instituted; (5) stage of lesion; (6) grade of lesion; (7) amount of x-ray and radium therapy administered; (8) type of surgery, if surgery was performed; and (9) result obtained. The same patients were then reviewed from the personal records of the radiologists Drs. A. B. Phillips, J. T. McMillan, III, and T. A. Burcham, who very kindly cooperated in furnishing much of the important material reported in this study. A questionnaire was then mailed to the attending physician of each of the patients in order that we might ascertain follow-up information and determine the final result. A 91.5 per cent follow-up was thus obtained, and we wish to express our thanks to the physicians for their fine cooperation.

FAULTS FOUND IN CASE RECORDS

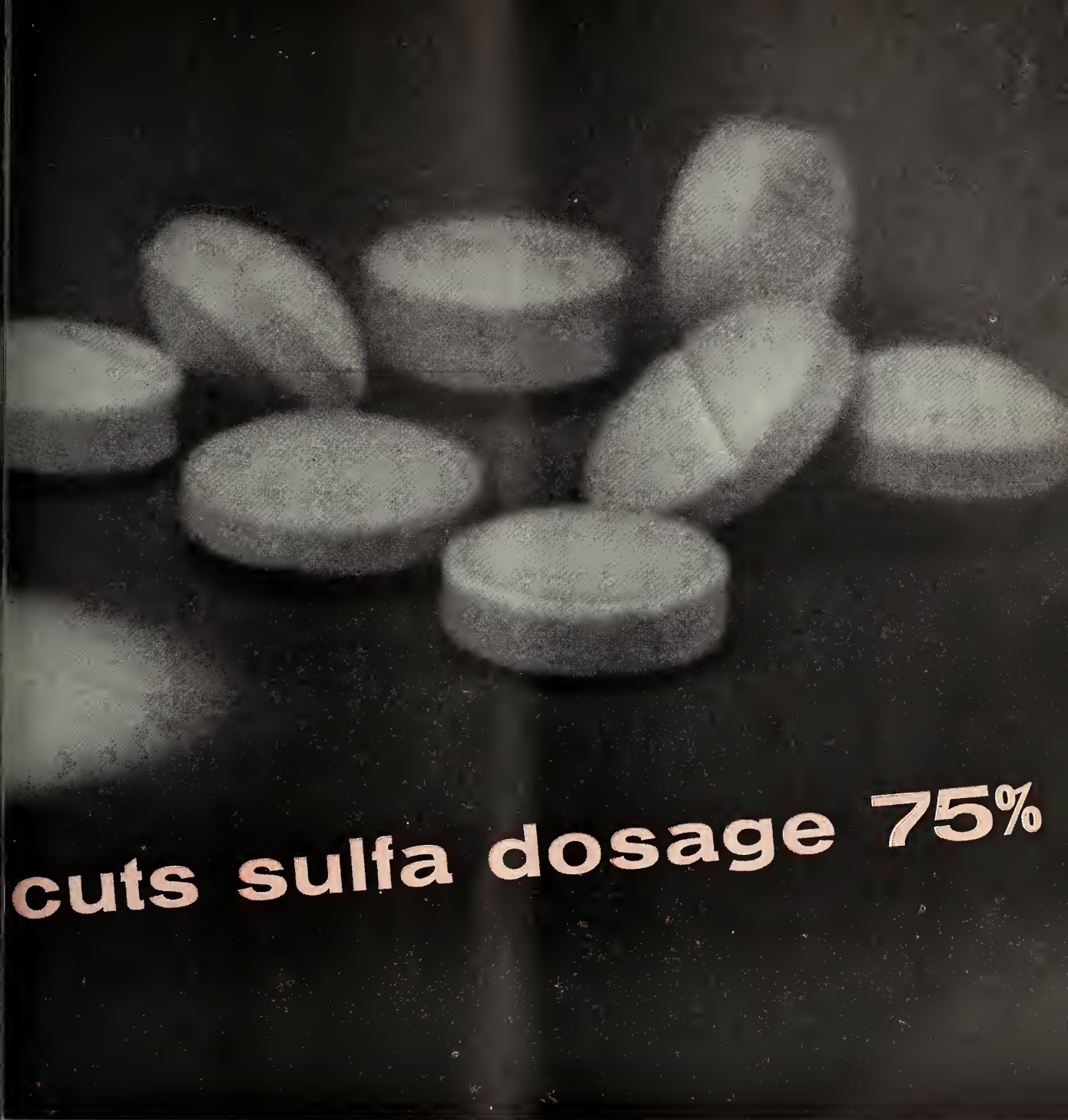
In reviewing the charts, we found some room for improvement both in the overall quality of the reporting and in the accuracy of the information that had been set down. As for the first of those faults—the sketchiness—none of us who has reviewed case records in our hospital will be surprised to hear that some which we examined were far from complete.

It is to the second fault that we wish to draw particular attention. A large share of our staff appear to be confused as to the distinction between *stage* and *grade* of a lesion. The prognosis in any particular case is, of course, related directly to the clinical stage of the lesion, and thus the stage has a great deal more importance than has the microscopic grading of the degree of malignancy. This is one of the points that will be demonstrated in the analysis of some of the findings of this survey. As a result of the confusion that we have mentioned, the reviewer himself had to stage many of the cases on the basis of the operative notes and the records of pelvic examination that were available to him. In at least half of the cases, the attending physicians had made no mention in the charts regarding the clinical stage of the disease.

There are two methods of staging used in the United States. First, there is the Schmitz method which many of us learned in school, and second, there is the international or League of Nations classification, which is more universally accepted.



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If one is to compare results in his own hospital with those achieved at other institutions, he and his colleagues must almost necessarily have used the international classification.

STAGES OF CARCINOMA OF THE CERVIX
INTERNATIONAL OR LEAGUE OF NATIONS CLASSIFICATION

Stage 1. The tumor is limited to the cervix.

Stage 2. The tumor has spread to the vagina and/or into one or both of the broad ligaments, but the uterus has not become fixed to the pelvic wall.

Stage 3. The tumor has extended into the lower third of the vagina or has reached one or the other lateral pelvic wall and is fixed.

Stage 4. The tumor involves the bladder or rectum, or there is some distant metastasis.

A microscopic grading of the degree of malignancy based on Broeder's classification has no relationship to the clinical stage to which the disease has progressed, and the confusion between *stage* and *grade* of which we found evidence may to some extent have affected the validity of the figures which we shall present. In some clinics, it is routine for all lesions to be staged by the most senior members of the staff, so that the greatest possible uniformity may be obtained.

There likewise were some variations in the thoroughness of follow-up. Although we report a 91.5 per cent follow-up and feel that our figure is an honest one, we have reason to believe that in some instances the procedures were very cursory. Sometimes, indeed, information was based only upon hearsay.

RESULTS

Each of the cases reported as cures had a very definite follow-up. Many of those found to have had recurrences within five years had had no final result recorded in any of the three sources that we investigated. Table 1 shows the overall results in the cases studied. In a total of 82 cases, there had been 47 deaths (57.4 per cent); 7 cases lost (8.5 per cent); and 28 five-year survivals (34.1 per cent). Computed only for those cases traced, the five-year survival rate would thus be 37.3 per cent.

Table 2 shows the stages of lesions. It can be seen that there were equal numbers in Stages 1, 2 and 3, but a small number had to be classed as Stage 4. This distribution by stages is fairly consistent with the proportions reported from many other centers.

The important part that staging can play in prognosis is shown clearly in Table 3. There, it is shown that a woman with a Stage 1 lesion stands about 2½ times as great a chance of five-year survival as does one with a Stage 2 lesion, and a woman with a Stage 2 lesion stands nearly twice as great a chance as does one whose carcinoma has been classed as Stage 3. There were no five-year survivals among patients in whom Stage 4 lesions had been found.

ANALYSIS OF CARCINOMA OF THE CERVIX
IOWA METHODIST HOSPITAL 1946-1951

TABLE 1

	Number	*Per Cent*
Total cases	82	100
Cases lost to follow-up	7	8.5
Cases followed up	75	91.5
Deaths	47	57.4
Five-year survivals	28	34.1 (37.3% of traced cases)
	75	91.5

TABLE 2
STAGE OF LESION

I	II	III	IV
25 30.5%	28 34.1%	24 29.3%	5 6.1%

TABLE 3
FIVE-YEAR SURVIVAL BY STAGES

	I	II	III	IV
Total patients	25	28	24	5
Number of 5-yr. survivals	17	7	4	0
5-yr. survival rate	68%	25%	16.6%	0%

TABLE 4
GRADE OF LESION
70 Cases

I	II	III	IV
0 0%	17 24.3%	30 42.9%	23 32.9%

TABLE 5
5-YR. SURVIVAL BY GRADE OF LESION
26 Cases

	I	II	III	IV
Total patients	0	17	30	23
Number of 5-yr. survivals	0	10	12	4
5-yr. survival rate	0%	58%	40%	17%

TABLE 6

Carcinoma of the Cervical Stump	6
Adenocarcinoma of the Cervix	5

TABLE 7
ATTENDING PHYSICIANS

	Cases
Gynecologists	36
Surgeons	28
Others	18

The classification of 70 of our cases according to Broeder's scale of grades of malignancy is shown in Table 4. There, one can see that there were no Grade 1 lesions, and that a preponderance of our cases were in Grade 3. Table 5 shows the five-year survival rates based on the microscopic grades of lesions. It is evident there that *grade* provides far less reliable grounds for prognosis than does *stage,* since there is little difference between the survival rates of the patients who had Grade 2 and Grade 3 malignancies. The Grade 4 cases, as might have been expected, showed a very poor end result.

As we all are aware, the treatment of adenocarcinoma of the cervix or carcinoma of the cervical stump often complicates the therapy, and the results obtained from the treatment of cases so complicated are, by and large, less satisfactory than in the simple ones. For that reason, the exact numbers of each of these secondary lesions were determined, and they are shown in Table 6. Analysis of this table brings immediately to one's attention that six cases of carcinoma of the cervix could have been prevented if total hysterectomy had been performed at the time these women were subjected to surgery. It is now almost routine in our hospital to do a *total* hysterectomy whenever a hysterectomy is done at all. Let us hope that when a similar study is done of cases treated at Iowa Methodist in more recent years, it will reveal no such stump cases. These cases were treated by 25 different attending physicians—by gynecologists, surgeons and others, including internists—as is shown in Table 7. All of the patients, of course, except those who received no therapy, were treated in addition by the radiologic staff of the Hospital.

THERAPIES THEN IN USE

It is of importance to observe by what methods these cases were treated. Table 8 shows the numbers subjected to Roentgen therapy, to surgery, to surgery and Roentgen therapy, and to no therapy at all. The basic plan of Roentgen therapy employed in the majority of cases at that time was the administration of 5,400 mg. hrs. of radium directly to the cervix by means of a Clark applicator, and in addition 4,000 r. of x-ray, given in air through four to six ports. For the purposes of this paper, all patients who received that dosage will be considered to have been adequately treated, although according to present standards a considerably higher dosage is regarded as advisable. Some of the patients who were treated during the latter years of the study period did receive larger dosages.

Table 9 shows that 65 patients were treated with Roentgen therapy. Fifty-eight (89.2 per cent) of them received 5,400 mg. hrs. of radium and 4,000 r. of x-ray. Sixteen patients received 5,400 mg. hrs. of radium and 6,000 r. or more of x-ray therapy. On the 12 patients who were subjected to surgery, the following procedures were performed (Table 10).

TABLE 8

TYPE OF TREATMENT

Roentgen	*Surgery*	*Roentgen + Surgery*	*No Therapy*
65	3	9	5

TABLE 9

ADEQUACY OF ROENTGEN THERAPY

65 Patients

Patients who received 5,400 mg. hrs. plus 5,000 r. or more of x-ray (Of those 58, there were 16 who received 5.400 mg. hrs. plus 6,000 r. or more of x-ray.)	58
Patients who received less than 5,400 mg. hrs. plus 4,000 r. of x-ray	7

TABLE 10

TYPE OF SURGERY

Total Hysterectomy	2
Total Hysterectomy Bilat. Salpingo Oophorectomy	4
Radical Hysterectomy	5
Subtotal Hysterectomy	1

The radical hysterectomies performed were of the Wertheim type of modifications of it. Several of them were less radical than the typical Wertheim hysterectomy. Most of the other operations were performed without the surgeon's having any foreknowledge of the exact type of lesion he would encounter, and the diagnosis of carcinoma of the cervix was made by the pathologist after the surgery. In spite of this fact, two of the Stage 1 lesions were cured by simple total hysterectomy and bilateral salpingo-oophorectomy. Obviously, the case with sub-total hysterectomy had a fatal result.

COMPARISON WITH RESULTS ELSEWHERE

Now that our analysis has been reviewed, let us compare the findings at Iowa Methodist Hospital with those reported from medical centers elsewhere in the United States. At the top, in Table 11 are the Iowa Methodist Hospital figures. Then, in order, are those from the Johns Hopkins Clinic, from the State University of Iowa, from the Mayo Clinic and from Mercy Hospital, Chicago. The last named are the results of a survey run by Dr. Herbert Schmitz, who is one of the most prolific writers and outstanding authorities on the treatment of this disease in the United States. In 1954, Dr. Schmitz reviewed the cases treated at an unnamed metropolitan hospital, presumably in Chicago, though not his own, and wrote an article entitled "Carcinoma of the Cervix—Failure of Haphazard Treatment." The cases in the series that he reviewed had been treated by a large number of staff men, and the therapy that they administered had had no overall planning or organization. When possible, patients were supposed to receive 3,500

mg. hrs. of intracervical radium and approximately 5,000 r. of x-ray given in air. It can be seen that these results were entirely unsatisfactory, and that they fall far short not only of those obtained in the better-organized clinics but also those that we obtained at Iowa Methodist Hospital.

The final hospital from which results are summarized in Table 11 is St. Vincent's, Boston, where the survey was supervised by Dr. J. V. Meigs, who as you know has treated a great number of such cases surgically. In his review, Dr. Meigs discussed only the Stage 1 and 2 lesions, and reported an

TABLE 11

COMPARISON OF RESULTS IN TREATMENT OF CARCINOMA OF THE CERVIX

Institution	*Total Cases*	*5 Yr. Cure*	*International Stage* I	II	III	IV
Iowa Methodist 1946-1951	82	34.1%	68%	25%	16.6%	0%
Johns Hopkins 1940-1948	522	33%	69%	38%	13%	4%
State Univ. Ia. 1942-1950	619	45.4%	71.6%	41.4%	19.5%	11.9%
Mayo Clinic 1940-1948	754	47%	91.7%	76.7%	of followed cases	
Mercy Chicago Schmitz 1946-1949	116	43.1%	65 1%	39.3%	9%	
Metropolitan Hosp.? Schmitz 1940-1946	602 (29.4%) (Traced)	17.4%	70.6%	21.1%	5.6%	
St. Vincent's Meigs 1942-1949			64% S 74%	45% S 51%		

overall survival of 64 per cent of the patients in Stage 1 and 45 per cent of the patients in Stage 2. Dr. Meigs also gave some five-year survival rates for a series of cases treated by surgery alone, and those figures also appear in Table 11, each preceded by the letter "S."

After studying this comparison, one might possibly come to the conclusion that Iowa Methodist Hospital gets, by and large, more serious or far advanced cases than do the other institutions. Table 12 shows the percentages of the patients with the various stages of lesion, insofar as those statistics were to be found in the reports from the several hospitals. From this it can be seen that the incidences of the various stages of lesion at Iowa Methodist Hospital are quite comparable with those at the other institutions.

TABLE 12

COMPARISON OF INTERNATIONAL STAGE OF CARCINOMA OF THE CERVIX

Institution	I	II	III	IV
Iowa Methodist	30.5%	34.1%	29.3%	6.1%
Johns Hopkins	26%	26%	34%	15%
State Univ. Iowa	32.4%	47.1%	12.6%	7.8%
Metropolitan Hosp.? Schmitz	29.6%	31.2%	33.5%	

From a study of these figures, it can further be seen that Iowa Methodist Hospital has a fairly satisfactory five-year survival rate, even though most of the cases treated during the period studied received treatment which by present-day standards would be considered inadequate. Analysis of our results shows, however, that our five-year survival rate for patients who had Stage 1 lesions compares more favorably with the results achieved elsewhere than do the rates for those of our patients who had Stage 2 carcinomas. This, we feel, could have been expected, since the radium dosage administered to the Stage 1 cases here was very nearly comparable to that which is used in most centers. As regards Stage 2 lesions, however, in which external radiation is of far more importance, our results fell far short of those reported at other hospitals where considerably higher dosages of external radiation were applied to the parametrial areas. In the treatment of Stage 3 lesions, where results are generally unsatisfactory, our results show to no particular disadvantage.

SUGGESTIONS FOR IMPROVING MANAGEMENT

We feel that we should analyze these facts further, to ascertain what deficiencies or inadequacies in our handling of cases might have contributed to our somewhat less than ideal five-year survival rate. First among these inadequacies is probably the lack of uniformity of methods, particularly in follow-up. In probably 50 per cent of the cases, the man who initially diagnosed the patient and admitted her to the hospital did not have a five-year follow-up record. Too many of us seem to have shrugged our shoulders and said, "Let John do the follow-up," as regards cases in which several physicians were involved. As we have said, the follow-ups that we have used as the basis for our figures had to be composite affairs, pieced together from several sources, and in many cases the information we now have is more up-to-date than that possessed by the patient's original physician. It is no longer satisfactory to give carcinoma of the cervix empirical treatment to the best of one's knowledge at the time, and then send the patient out to survive or die. Frequently, further therapy is indicated in these cases. Thus, the patients should be followed and not only given frequent and careful pelvic examinations, but also tested by periodic Papanicolau smears and repeat biopsies. By such means we can make sure of having an opportunity to administer further treatment and often effect a cure when the initial therapy has failed.

Anyone who assumes the diagnosis and treatment of carcinoma of the cervix, we feel, is obligated to follow the patient for a period of at least five years. True, in many instances the patient has been referred by another physician, and an ethical man feels that she should be returned to her own doctor. In our practice, we have asked the referring physicians that we be allowed to follow these patients personally until at least five years have elapsed. To date, none of the referring physicians have objected, and most of them have agreed that the arrangement for which we asked was desirable.

One case in the present study group illustrates this point. The patient received what seemed to be adequate initial therapy, but later developed a recurrence. Dr. Phillips again applied radium, and although the second application produced enough rectal damage so that the patient had to have a colostomy, she was cured of her carcinoma of the cervix. We feel, however, that her colostomy was a small enough price for the cure of her cervical cancer. As the treatment of this disease improves, other methods of augmenting the initial x-ray and radium therapy will be devised—some of them surgical—and by such improved secondary treatment, a marked increase in our five-year survivals can be anticipated.

Another inadequacy—one which we have previously discussed—was in the staging of the lesions. It is important not only from the statistical standpoint but also from the standpoint of therapy. The proper treatment can be chosen only if the lesion has been staged accurately. Staging will increase in importance as therapy is tailored to fit the individual case.

An important factor in the final results with carcinoma of the cervix is the stage of the lesion at the time therapy is started. Certainly the earlier diagnosis can be made and treatment instituted, the greater the patient's chance of survival. Delay in diagnosis and treatment can be due either to neglect on the part of the patient or to neglect on the part of the physician. Table 13 indicates our experience in his area. There, one notes that 26 patients out of 82 had had symptoms for six months or more. Those 26 comprise 31.7 per cent of the series. Nine of the 26 had been treated by a physician for a period of six or more months before a diagnosis was made and therapy was started.

TABLE 13

DELAY IN TREATMENT

26 patients had symptoms for six months or more.
31.7% of the total cases.
9 of these patients treated by a doctor for six months or more before definitive therapy was started.

Education of both the patient and the physician is the most important factor in the solution of this problem. We must educate the patient to become more promptly aware of her symptoms and seek an early examination. We must also educate the physician to have a high suspicion of cancer of the cervix and to arrive at a positive diagnosis after careful examination and before he starts any therapy for a bleeding irregularity. Many of these nine patients might possibly have survived if the diagnosis had been made when they were first examined.

"The Philadelphia Story" is of interest as regards the education of patient and physician. The Philadelphia Cancer Committee, formed several years ago, functions much as the Maternal Mortality Reviewing Board functions in this and in other states, except that its province is deaths from cancer. The Philadelphia Cancer Committee considers the relevant data and consults with the attending physician and other interested parties in an effort to discover by what means a cure might have been effected. Its work has created a marked increase in awareness of cancer among the physicians of Philadelphia and has aided in public education regarding the disease.

Our next concern is to determine what we can do to improve our results of treatment. The first step has probably already been taken, in that more intensive therapy for these lesions has been instituted. Since the latter part of 1951, radium has been applied by means of the Ernest applicator, which not only radiates the cervix very adequately but also delivers a greater dosage of roentgens to the parametrial area. Approximately 7,200 mg. hrs. of radium has been administered to such cases. Further, most patients now receive 6,000 r. in air through six ports. It is the radiologist's desire to deliver at least 5,000 r. to Point B in the parametrium if possible, a dosage which is considered cancerosidal.

Next, it is important that we establish an adequate cooperation between the attending physician, the radiologist, the pathologist and the other physicians who participate in the therapy of these cases. This, we feel, can best be accomplished by the establishment of so-called "cancer team," analgous to the "cardiac team" that has accomplished a great deal at Iowa Methodist Hospital in the treatment of congenital heart disease. Such a group of men interested in carcinoma of the cervix could evaluate each case, plan its therapy and make certain of its adequate follow-up. By combining their efforts and knowledge, they might introduce many of the newer aspects of cancer treatment into our regimen. More particularly, by pooling such cases a central follow-up office might be set up. Funds for the establishment of clerical service for following such patients, making certain that they return for periodic reexamination and recording data on their progress might come from the American Cancer Society.

Dr. Schmitz has made a strong point of the usefulness of the "cancer team" approach in his hospital in Chicago. All the patients treated there are analyzed and evaluated by such a group of men. This technic does not necessitate divorcing the patient from his original attending physician; rather, as a matter of routine, it provides him with several consultants, each highly trained and experienced in a particular aspect of the management of such cases. If such a scheme were introduced at Iowa Methodist Hospital, we feel that our results could be made comparable with the best in the country.

NEW TREATMENT METHODS ARE COMING

Even the best carcinoma figures, as can be seen, are sadly inadequate. Of interest are the effort and research being devoted toward the discovery

of means for improving overall results. Probably the most promising is the work being done by John B. and Ruth Graham in association with Dr. Meigs at the Harvard Medical School, in Boston. The Grahams feel that by vaginal smear studies prior to and during radiation therapy for carcinoma of the cervix, the sensitivity response can be determined. By this measurement, patients can be selected in whom surgery is the therapy of choice, and likewise it will be possible to select those sensitive cases that can best be treated by radiation. The characteristic changes found in the basal cells of the vaginal mucosa are used to determine this response. The changes consist of a fine vacuolization and an increased density of the cytoplasm. If 10 per cent or more of the benign epithelial cells show these changes, the sensitivity response is called "good." If nine per cent or fewer are found, the SR is called "poor." In 100 patients treated radiologically, 35 had "good" SR's, and 66 per cent of those 35 were living and well five years after their radiation therapy. Of the 65 patients who had "poor" SR's, only 18 per cent survived the five years.

The Grahams also study these patients during therapy and find that after approximately 1,000 r. has been administered, certain characteristic changes indicate sensitivity. These changes are vacuolization of the cytoplasm, increase in cell size, and the appearance of multiple nuclei and nuclear alterations. If fewer than 60 per cent of the cells show these changes, the outlook is considered bad, and the response is called "poor." However, if 75 per cent or more of the cells show these changes, the response is called "good." Out of 125 patients so studied, 62 had "good" responses, and of them, 59 per cent were living and well after five years; 63 had "poor" responses; and only three per cent of them lived five years. With this data, Dr. Meigs has been able to effect a selectivity in the treatment of his cases and has recently been reporting excellent results by individualizing the patients, treating some with radiation, some with radiation and surgery, and others with surgery alone.

Many new radiation technics are being developed, primarily in an effort at more adequately irradiating the parametrial areas. Among these are high-voltage x-ray machines, new and diverse radium applications, and as for example in St. Louis, the injection of radioactive colloidal gold into the parametrial areas.

Surgery, after an initial enthusiasm for it immediately following World War II, is now finding its logical place in the treatment of carcinoma of the cervix. The Mayo Clinic, for example, has been treating all cases in young women and many in older ones by a combination of surgery and x-ray, doing radical surgery following a thorough radiation treatment. The Mayos' initial results have been very encouraging, and their form of therapy may very well find great popularity among gynecologists over the country.

Many other forms of treatment and means of studying these cases are constantly being evolved, and as Medicine progresses in other fields, no doubt results in the treatment of this disease will be markedly improved throughout the country.

CONCLUSION

A review of the cases of carcinoma of the cervix treated at Iowa Methodist Hospital during the years 1946-1951, inclusive, has been analyzed. The overall results at this Hospital have been found fairly satisfactory, but many areas have been noted in which improvements can be made in technics.

It is suggested that a "cancer team" be formed to evaluate and plan the future therapy for such cases, for it seems certain that marked improvement in results can be achieved by that means.

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DIABETES MELLITUS

An all-day symposium on "Recent Developments in Diabetus Mellitus (pathology, diagnosis and therapy)" will be sponsored by the Chicago Diabetes Association on November 20 at the Drake Hotel, in Chicago. A registration fee of $25 will be charged of all physicians except members of the American Diabetes Association and the Chicago Diabetes Association. Members of AAGP may claim hour-for-hour Category II credit.

Henry T. Ricketts, M.D., will be moderator, and the speakers will include Aaron Arkin, M.D., Arthur R. Colwell, M.D., Howard S. Traisman, M.D., Robert M. Kark, M.D., and Rachmiel Levine, M.D., of Chicago, Solomon A. Berson, M.D., and Rosalyn S. Yalow, M.D., of New York City, Alexander Marble, M.D., of Boston, and David A. Rosen, M.D., of Kingston, Ontario. Copies of the program can be secured from the Chicago Diabetes Association, Inc., 5 South Wabash Avenue, Chicago 3.

Leiomyoma of the Gastrointestinal Tract

With Reports of Three Cases

J. B. PRIESTLEY, M.D.

DES MOINES

Sixty-three years ago, Von Eiselsberg[1] successfully excised a gastric leiomyoma in a 30-year-old woman. Eusterman[2] recorded 27 benign tumors of the stomach occurring at the Mayo Clinic between 1907 and 1921. Three were leiomyomas. Reineits,[3] examining the first 130 consecutive postmortem examinations performed at the Mayo Clinic in 1928, found 21 leiomyomas in 16 stomachs. These varied in size from 0.1 to 0.9 cm. in diameter. This suggested high incidence of these growths in the stomach, when compared with the overall incidence at operation, and indicates that by far the vast majority never grow large enough to become symptomatic. Balfour, in his discussion of Reineits' paper, remarked that repeated attacks of hemorrhage without other symptoms should always arouse suspicion of benign tumor, possibly leiomyoma. Saying that these tumors seldom, if ever, become malignant, he emphasized the cognizance of large leiomyomas such as occasionally are found high in the stomach will often save the patient unnecessary extensive gastric resection. Noteworthy was Judd's report,[4] in 1935, of 50 benign tumors of the stomach, three of which were leiomyomas. His study revealed anemia of the secondary type as the most frequent sign of benign gastric tumor. He directed attention to the frequency of these tumors near the pylorus, with resultant pyloric obstruction either from actual protrusion through the pylorus or from interference with gastric motility. In 1930, Balfour[5] warned that occasionally these tumors ulcerate deeply enough to suggest a diverticulum of the stomach. Mack,[6] in 1948, reemphasized that leiomyomas are primarily intramural tumors. However, when they become large they may project into the lumen, even becoming pedunculated. He found necrosis and ulceration not uncommon. Garbarini[7] described calcification in a gastric leiomyoma, indicating this type of tumor could be calcified in the stomach as well as in the uterus. He likewise emphasized the frequency of acute or chronic blood loss. Burkhead[8] documented five surgically proved benign tumors of the stomach from Northwestern Medical School from January, 1941, through May, 1952. Two were leiomyomas. Cressman,[9] in 1954, described five leiomyomas, one of which occurred in the duodenum.

I now wish to report three cases of gastrointestinal leiomyoma upon which I have operated during the last 10 years. I shall refrain from making these reports verbose, but feel since each has a lesson of importance to teach, and since symptomatic leiomyomas of the gastrointestinal tract are extremely rare, the reporting of these patients is justifiable.

Case No. 1. Miss F. C., age 65 years, entered Iowa Methodist Hospital 1-15-'55 worrying about being tired, weak and worn out. She recited a 30-year history of treatment for a modicum of anemia, with no hematemesis or tarry stools. Nevertheless, she enjoyed generally good health until two days before, when suddenly she became tired and "all-in." In the past two years, she had suffered a 25-pound weight loss and anorexia, but no dyspepsia. Her past medical history included shortening of the round ligaments and removal of one ovary —a bucolic operation which is still performed occasionally hereabouts. Physical examination disclosed only evidence of marked anemia. The blood

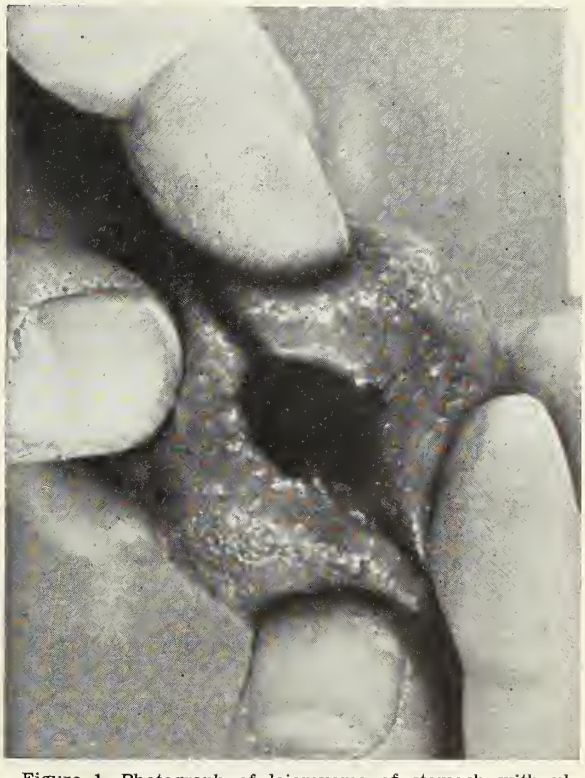


Figure 1. Photograph of leiomyoma of stomach with ulceration.

contained 5.4 Gm. of hemoglobin, and 1,980,000 red blood cells per cubic millimeter, with a severe hyperchromic anemia. Stools repeatedly contained occult blood. Studies of gastric acids and the bone marrow revealed normal findings. Barium studies of the stomach silhouetted a rounded, circumscribed tumefaction in the fundus 5 cm. in diameter, with a central area of necrosis, believed to be a leiomyoma.

At surgical exploration on 1-25-'55, a mass was encountered in the upper third of the stomach. It was excised without gastric resection, and pathologically (Figure 1), it proved to be a leiomyoma with a large ulcer. The patient left the hospital on her twelfth postoperative day, and has remained in good health.

The importance of excluding the stomach as a cause of secondary anemia in all patients so suffering cannot be overemphasized. This woman had been treated medically for anemia at intervals for 30 years without ever having had a gastrointestinal ray. Gastric or colon lesions may masquerade as secondary anemias, thus making early roentgen examination mandatory.

Case No. 2. Mr. K. W., aged 32 years, sought his physician because of sudden, profuse intestinal hemorrhage. His colon ray (Figure 2) indicated a circumscribed lesion of the descending colon. On 12-22-'48, with the abdomen opened, the sigmoid presented a growth appearing benign grossly. It was enucleated, without resection of the colon.

The pathologist later described the tumor as "showing very pronounced fibroblastic proliferation, with infiltration of lymphocytes and eosinophils. The central portion presented large expanses of the amorphous, degenerative change containing focal areas of hemorrhage. Remnants of muscular whorls were seen, although necrosis tended largely to obscure the pattern." Pathologically, the lesion was diagnosed a degenerative leiomyoma.

This case is presented briefly to indicate, first, that these tumors may occur along the gastrointestinal tract in locations other than the stomach, and second, to point out that when encountered, resection is not mandatory, for often they can be quite satisfactorily enucleated.

Case No. 3. Mr. J. W. presented himself with a secondary hypochromic anemia and dyspepsia. We felt his roentgenogram (Figure 3) represented a malignancy high in the cardia of the stomach. Preoperative preparations were made for total gastrectomy, should such a procedure be indicated at operation. However, upon exposure of the stomach, this tumor appeared grossly benign. In this particular instance, no frozen section was available. However, because of apparent benignancy, this tumor was excised and a gastric resection not performed.

The pathologist described the specimen as being "a well circumscribed tumor 3 x 3 x 3 cm., with an ulcer on the mucosal surface measuring 1½ x 1 x 1½ cm. deep." He stated that beneath the ulcer there was a tumor to which the ulcer was penetrating. The tumor comprised uniform bundles of well differentiated smooth muscle arranged in the pattern of a benign leiomyoma. Numerous small vessels were found beneath the necrotic base of the ulcer, suggesting the source of massive gastrointestinal hemorrhage. Diagnosis: Benign ulcerative leiomyoma of the stomach."

Presentation of this case should emphasize the



Figure 2. Roentgenogram of leiomyoma of sigmoid colon.



Figure 3. Roentgenogram of leiomyoma of stomach.

fact that occasionally large tumors in the cardia of the stomach appear roentgenologically inoperable, but turn out to be benign. In such instances, these tumors may be excised locally without gastric resection. If the benignancy of such a tumor is not recognized at operation, the patient may be subjected to a useless total gastrectomy with a very greatly increased mortality and morbidity.

SUMMARY

Three patients with leiomyomas of the gastrointestinal tract have been presented. These tumors may occur anywhere along the gastrointestinal tract. Frequently, they induce chronic blood loss causing secondary anemia, or may cause sudden massive gastrointestinal hemorrhage.

CONCLUSIONS

1. All patients with secondary hypochromic anemia should experience gastrointestinal roentgenologic examination early in their evaluation.
2. Surgical recognition of gastrointestinal leiomyoma is of commanding importance in avoiding unnecessary extensive surgical procedures carrying a relatively high mortality and morbidity.

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Diodoquin in the Treatment of Chronic Diarrhea

ALONZO L. JENKS, JR., M.D.

DES MOINES

The purpose of this brief paper is to draw attention to the beneficial effects which may follow a therapeutic trial of a relatively specific medication in certain types of chronic diarrhea.

Patients with this distressing complaint deserve careful study. To exclude organic disease of the colon, a detailed history, a thorough physical examination, stool analysis, radiologic investigation, and proctoscopic examination including fresh scrapings and cultures, are necessary. If all of these are found to be normal, then extra-colonic organic diseases such as illeitis, allergy, etc. must be excluded, too. Screened by the above procedures, the remaining patients are often said to have gastrointestinal neuroses, and the terms *mucous colitis, irritable bowel, functional diarrhea* and *spastic colon* are frequently used in a descriptive diagnosis.

Therapy by means of diet, mild sedation, antispasmodics, and adequate rest, recreation, etc. frequently induces a satisfactory response. However, one may occasionally encounter a patient who continues to have distressing bouts of diarrhea in spite of all therapeutic efforts. These individuals then should certainly be given the advantage of a therapeutic trial with Diodoquin.

ABBREVIATED CASE SUMMARIES

Case No. 1. J. S., age 24, a housewife, had had severe diarrhea off and on for 4½ years. After all tests were found to be negative, she was treated for functional diarrhea at University Hospitals and at one other medical center. Periods of constipation interspersed her attacks of diarrhea.

The attack which brought her to my office had started two months earlier. She had lost 10 pounds in six weeks' time, and then was admitted to a hospital for study. While there, her diarrhea had become worse, and she had lost another 10 pounds. Her bowel movements were loose and watery, and there were 15 to 20 of them daily.

Several stool tests were negative for ova and parasites, but many pus and blood cells were present. In addition, there was undigested food in the stools. The cultures were negative.

Diodoquin at first was not effective, but after about 10 days, the stools began to become more solid. The patient had an uphill course, several recurrences and numerous courses of therapy, but she gained 22 pounds, and though during her recovery her husband died after a long illness, she reported having had no recurrence of her diarrhea. She now has one or two stools daily and has had

no abdominal distress during the past two years. During this time, she has had two periods of rather severe emotional distress, but they did not bring on any recurrence of the diarrhea.

Case No. 2. H. W., a white female, age 34, had had diarrhea for 10 years. An ischio-rectal abscess required surgery. Her bowels moved 10 or 15 times daily, nearly always in the morning. The stools weren't tarry or bloody, but there was occasional mucus. Several stool tests had been negative for ova and parasites. In the year before she came to see me, she had lost 12 pounds. At a large medical center, she had been told that she had "nervous diarrhea."

Her response to Diodoquin was marked. In five weeks, she reported that her stools were occurring every other day, and were formed. She gained six pounds. When she was seen four months later, she had gained another six pounds, but because she was beginning once more to have some loose stools, further therapy was started. There was good response, and in the past seven years she has had no recurrence of the diarrhea.

Case No. 3. L. M., a white woman 72 years of age had had diarrhea for over 30 years, with marked abdominal cramping. She had many loose stools each day, sometimes as many as 20, and her weight was 87 pounds. When she was first seen, she had an acute gallbladder attack. At surgery, a mass was felt in the recto-sigmoid. There were marked induration of the colon, small bowel and mesentery, and mesenteric gland enlargement. After the gallbladder surgery, proctoscopic examination revealed ulcerating carcinoma in the recto-sigmoid and a few small polyps. Biopsy of the lesion revealed Grade II adeno-carcinoma, and E. histolytica was reported in the biopsy specimen.

When the carcinoma had been removed and repair had been effected by end-to-end anastomosis, the patient was given large amounts of Terramycin in the hospital and the stools became more formed. At home, her diarrhea recurred, but there was good response to Diodoquin. Because the diarrhea returned in two or three weeks when she ceased taking the medication, she continues taking from one to three tablets daily. Stools average two per day, and there are no abdominal cramps.

Case No. 4. R. P., a minister 34 years of age, had had diarrhea for 14 years, with loose and watery stools varying from eight to 15 daily. He had been treated for ulcerative colitis at a large medical center, and for "emotional diarrhea" at University Hospitals, but the diarrhea continued. Proctoscopic examination revealed polypoid degeneration secondary to chronic diarrhea. Several stool examinations were negative for ova and parasites. Because of the long-standing inflammatory process, amyloid disease of the kidney developed, complicated by severe lipoid nephrosis. During the course of treatment for this condition, the diarrhea continued.

Diodoquin was started under controlled conditions in the hospital, and within 48 hours the stools were less numerous and considerably firmer. Within 2 weeks he reported the first solid stools in years. The lipoid nephrosis is improving. When Diodoquin is discontinued, within a week the stools again become loose and watery, and vary from six to 12 daily. This patient now takes two or three tablets of Diodoquin daily and reports that the stools are solid. Though occasionally there are as many as three of them in a day, usually there is only one.

Case No. 5. D. B., a warehouse worker aged 56, reported abdominal cramps, large amounts of gas, and loose and watery stools for a period of five years. He had been treated throughout the past three years for "nervous diarrhea." A proctoscopic examination was negative, and a stool examination was negative for ova and parasites. An x-ray examination of the colon revealed an irritable bowel. Ten days after starting Diodoquin therapy this patient reported having no diarrhea for the first time in years. There was a marked diminution in the amount of gas, and no bloating. Following the 30-day period of treatment, he has had no further trouble with diarrhea for four months.

Case No. 6. L. W., a 43-year-old farmer, had had four to six loose, watery stools per day for a period of five months. He was treated for "functional diarrhea" by his local physician during that time, but the symptoms persisted. An x-ray of the colon was negative, and proctoscopic examination revealed mild inflammatory mucosa in the lower bowel, with small, pin-point, red appearing ulcers. A stool examination was negative for ova and parasites. After 10 days' treatment with Diodoquin, his stools were normal. After 30 days treatment he has had no recurrence within the past six months.

Case No. 7. In M. M., a 51-year-old woman, diarrhea had begun with nausea, vomiting and cramps while she was visiting in Miami, Florida, approximately three months before she came to see me. Cramps and diarrhea had persisted, and stools varied from three to six daily. They were loose and watery. An x-ray examination of the colon and a stool examination had been done in a hospital, and had been reported negative. Subsequently, she had been put under treatment for "mucous colitis," without much relief of her symptoms.

This patient was difficult to control, but following 10 days' treatment with Diodoquin, the stools were much better formed and were occurring two or three times daily. Although the patient's ultimate response was good, she had several recurrences of diarrhea and cramps. When last seen, she had been free from abdominal symptoms for approximately two years.

Case No. 8. P. S., a 39-year-old housewife had had recurring bouts of diarrhea off and on for a year. A colon x-ray was negative. Proctoscopic examination revealed a few scattered small gran-

ular areas and a few reddened pin-point ulcerations. A stool examination was negative for ova and parasites. Following a therapeutic trial of Diodoquin, the stools returned to normal, and in a four-year follow-up no recurrence of the diarrhea was reported.

Case No. 9. R. C., a white male aged 79, had had diarrhea for two months, his stools numbering from five to eight daily. They were sometimes watery, but contained no blood. The patient had no anemia, but he had suffered a six-pound weight loss. A colon x-ray was negative. Proctoscopic examination showed diffuse redness, with a few tiny scattered ulcers. No ameba were seen in the stool examination or in the ulcer scrapings. The complement fixation was positive for E. histolytica in dilution 1:16.

The patient has shown a good response to Diodoquin. The number of his stools was two or three per day at first, and within two months there was only one each day. He has remained free of diarrhea for the past four years.

DISCUSSION

These nine cases have several characteristics in common. Seven of them had been studied carefully by competent physicians elsewhere. All had been diagnosed and treated as functional diarrhea. All patients complained of persistent bouts of diarrhea in spite of efforts at treatment (the duration of the chronic diarrhea having varied from four months to 30 years). Several of these people had developed very serious complications secondary to the long-standing diarrhea. No patient had been given the benefit of a therapeutic trial with a specific drug. All patients made a satisfactory response to Diodoquin.

Diodoquin is a double iodine compound (5,7-diiodo-8-hydroxy-quinoline) used as an intestinal protozoacide. Over a 20-year period, an extensive literature has accumulated describing its beneficial effects. It has been found to be completely nontoxic, and it is relatively inexpensive. It is poorly soluble in water, and thus, since it is poorly absorbed, it exerts its maximum effect upon lesions in the bowel mucosa.

Confronted with a patient complaining of bouts of chronic diarrhea and in whom organic disease, either colonic or extra-colonic, has been excluded, a therapeutic trial of Diodoquin can be accomplished in the following manner. The patient is instructed not to change his present routine of medication or diet, but to continue the regimen that he had been following before examination. Thirty 10-grain tablets of Diodoquin are ordered, and the patient is instructed to take one tablet at 9:00 a.m., one at 3:00 p.m. and one at 9:00 p.m.

If the therapeutic trial is to be evaluated fairly, the doctor must avoid entering into a detailed discussion with the patient regarding his disease and his probable response to the drug. If some explanation is unavoidable, the patient can be told that his diagnostic examination is continuing, and that the future management of his problem will be indicated by the effect the tablets have on his condition. He is then asked to return in 10 days. After that lapse of time, if the patient's disease is truly functional, he is likely to report no marked change in his condition. Although some of his symptoms may have changed slightly, it will be readily apparent that little or no real progress has been made. The patient then may be started on routine management of functional colonic disease, the only loss having been the 10 days' time and the small cost of the medication.

In the 10-day follow-up report, so as truly to evaluate the effect of the drug, it is advisable that the doctor should ask the patient what he has to report, and then that he should allow him more or less to tell his own story, without asking him leading questions. If, at that time, the patient reports that he feels considerably stronger, that the intestinal cramps and aching have decreased, that the stools are fewer and definitely better formed, and that the gas, the bloating and the urgency have decreased—then it is quite apparent that real progress has been made in the management of his condition.

Physical examination usually reveals less tenderness over the cecum and in the descending and pelvic colon. If these conditions prevail, a second course of the medication is started, to last 10 more days. It is well to remember to explain to the patient that the continued improvement may be interrupted by occasional mild flare-ups, but persistence in treatment is usually rewarded by further improvement. The usual complete course of Diodoquin lasts 30 days.

The exact nature of the therapeutic response induced by this program is not within the scope of this brief paper. Studies in an attempt to determine whether the response is specific or nonspecific are in progress and will be reported later. It is felt that no patient with recurrent diarrhea should be denied a therapeutic trial because all laboratory examinations have been reported negative.

SUMMARY AND CONCLUSION

Nine cases of chronic diarrhea have been reported, showing a favorable response to a therapeutic trial of Diodoquin.

Plan to Attend the 1958
ISMS Annual Meeting
Veterans Memorial Auditorium
Des Moines, April 20-23

Otitis Media, With Effusion

ROBERT R. UPDEGRAFF, M.D.

DES MOINES

MANY OF US TEND to look upon otitis media with effusion as a new entity because our experience with it has been relatively recent, but actually it has been well recognized for many years. In 1869 Politzer[1] described it in accurate detail, and in 1906 Kyle discussed the treatment of catarrh of the middle ear and approved the practice of myringotomy and inflation. From the late 1920's until 1940 it seems to have attracted little attention, for though the acute form of otitis media was excellently and thoroughly covered, little was said concerning otitities with effusion. More recently, Hoople[2, 3] and many others have done much to bring the chronic disease to our attention. This paper is based on a number of cases that I have seen in the last few years.

ANATOMY

The anatomical differences between children and adults are responsible for some of the contrasting features of the disease in the two groups. In a child, the eustachian tube is almost straight; it lies in an almost horizontal plane; and its orifice is just above the junction of the hard and soft palates, approximately on a level with the floor of the nose. In an adult, though it has its original diameter, it is twice as long as formerly, and its orifice has shifted to about the level of the posterior end of the inferior turbinate and is farther back on the lateral wall of the nasopharynx, above the level of the floor of the nose.

The physiology of the eustachian tube is dependent upon its opening when one swallows, yawns or chews. Anything that interferes with its patency during those functions leads to difficulties of the middle ear. Moreover, the tympanic membrane opens four millimeters above the floor of the tympanic cavity. There may also be varying amounts of lymphoid tissue in and about the pharyngeal orifice of the eustachian tube, commonly called Gerlach's tonsil or tubal tonsil.

PHYSIOLOGY

Normally, the eustachian tube attempts to maintain a stable pressure in the middle ear by acting as a flutter valve. Even a slight increase in the pressure within the middle ear can open the eustachian tube, but increased pressure in the pharynx can reach the middle ear only if one yawns, swallows or chews.

Eggston and Wolff[4] found that there are great variations in the size of the isthmus of the tube, even in patients of identical ages. These individual differences may be the reason why some individuals develop tubal obstruction and effusion more readily than others do, even under similar circumstances. True, it is strange that some youngsters with no more than a minimum history of recurring otitis media develop fluid, whereas others who have a retracted tympanic membrane and repeated eustachian tube difficulties do not. There must be individual differences of the tympanic mucosa, eustachian tube, and arterial and glandular activities about which we still know too little. Often the condition represents an aborted suppurative otitis media that has been sterilized by antibiotics, even though the antibiotics have been given for no more than a short period of time, and the material can accumulate without any antibiotic therapy. The patient merely needs to have had a cold, and we should remember that colds can have been caused by either virus infections or bacterial ones.

It has been said many times, and truly, that if this fluid is not evacuated, it will produce adhesive changes in the middle ear and is likely to cause permanent conduction deafness. It is difficult to explain why this material—whether of the serous, gelatinous or mucoid type—can remain within the ears of some children for a long time without producing anything other than a clinical picture of autophony, loss of hearing or mere inattentiveness. Somewhat similarly, the effects in younger children may be no more than fretfulness or fussiness, and perhaps a low-grade fever. Or there may be recurring otitis media, without the development of permanent changes. Yet, one must bear in mind, the effects in some children will be most severe. There again, the explanation may lie in the individual differences of tissue response.

Secretory otitis media implies a true glandular secretory activity on the part of the mucosa, but there probably is little or none of it in most cases. Frequently, it is true, there is an exudate, in which case the material within the middle ear is full of polymorphs and, though very infrequently, some eosinophils. But many times the fluid collects merely as the result of an atmospheric change. That is, the air has been absorbed from the middle ear when the eustachian tube collapsed or was unable to aereate it properly. A vacuum has been created, and Nature, abhorring a vacuum, has filled the middle ear with serum—a true transudate.

It could be that the fluid occurs sometimes as a response to a low-grade inflammatory reaction in the mucosa, eustachian tube and tympanum secondary to an infection in the nose and throat. In

that case, the fluid is an exudate, but one that is free of bacteria. This has been the finding in a large number of our cultures. They have returned no growth, regardless of whether they came from the ears of patients previously subjected to long courses of antibiotic therapy, or to short ones. Reports in the literature show that the culture is oftentimes negative even when the patients have been subjected to little antibiotic therapy.

Allergy is an important etiologic possibility, and probably an often-overlooked one. But still, it probably has been overemphasized on occasion, along with such other things as dental malocclusion, tumors of the nasopharynx and paralysis of the tensor villi palatini muscle. All of these, along with other rare findings, account for no more than a small percentage of these cases. The commoner difficulties would appear to be upper-respiratory infections, vacuum of the middle ear, lymphoid hyperplasia of the adenoid tissue and of Gerlach's tonsil, and the gelatinous, mucoid or serous otitis that results from the treatment of an acute suppurative otitis media.

INCIDENCE

Is this problem a growing one? In our practice, it does seem that this year and last we have seen increasing numbers of these cases. However, we must always keep in mind that we may merely be looking for this difficulty more closely than heretofore. By way of contrast, I might relate that Hoople once gave a long talk on this problem before a medical group, and four months afterward asked one of the men who had heard him, a fellow otolaryngologist, how many cases of it he had seen. The colleague replied, "None." It seems, of course, that no one with an active otolaryngologic practice could truthfully have made such a response.

When a bilateral myringotomy is done in an adenoidectomy, material not infrequently is aspirated from the middle ear even when a direct examination of the tympanic membrane has seemed to indicate a possibly negative tympanum. How much difficulty in the way of hearing impairment may threaten school children because of our failure promptly to discover such residual fluid or other material in the middle ear, it is hard to say. It is difficult to set up a test situation in which 1,000 promptly treated cases can be compared with 1,000 precisely similar untreated ones after a lapse of 10 years.

This fluid, in some instances, is known to have remained *in situ* for a long time. In one of my cases, for example, it was there for three years. We are all seeing resistant problems in our practices—patients in their teens or even in their twenties who are having repeated tubal infections in spite of every method of therapy. We see patients with retracted tympanic membranes and with partial loss of hearing. They are eight, nine or 10 years of age, and they make a more or less satisfactory response to treatment, but we always wonder what their status was at the time of infection, five or six years earlier. Could it be that they had some overlooked material behind their ear drums? Did it produce adhesions, with retraction of the tympanic membrane?

All of us are still seeing chronic suppurative otitis medias that are being treated off and on, or are eventually being subjected to surgery. Otitities of either the suppurative or the chronic-secretory type must have caused them. Again, we must keep in mind the virus infections that may have been the secondary cause, and we must account for the absence of growth on culture, and for the patient's failure to respond to such conservative therapies as adenoidectomies (one or more), x-ray or radium, vasoconstrictors to the nasopharynx and nose, straightening of the nasal septum, control of allergy and even myringotomies, with repeated and adequate suctioning of the middle ear, as necessary.

DIAGNOSIS

History taking, as all of us are well aware, is an important prelude to diagnosis in these cases, and the clues that one ordinarily uncovers in that process include repeated hearing difficulties in a youngster, recurrent bouts of otitis media every two or three weeks, and repeated courses of antibiotic therapy. The child, we are told, is fretful or fussy at night, though without fever, and hasn't been eating well. Perhaps he has been noticed tugging at his ear a little bit. Young children seldom complain of fluid in the ear, even though it may be present, but a few complain of head noise.

In making a physical examination, we should not content ourselves with short or superficial procedures. An ear that shows little in the way of acute inflammation may nevertheless have a lot of material behind the tympanum. There are clues to be looked for in an examination of the tympanic membrane, such as a lusterless eardrum or a thick and full-looking one, and perhaps a fluid line or some bubbles. The light reflex may be helpful as a guide, but it is a shortcut, and there can be material behind a tympanic membrane and in an antrum even though the membrane looks rather innocuous.

One should employ the pneumatic otoscope, he should undertake politzeration and reexamination of the tympanic membrane, and he should make an audiometric evaluation. Chronic irritability and inattention are the symptoms that parents frequently say their children have exhibited, and their duration may have been as short as a few weeks, or as long as a year or more. In such cases, a hearing loss is usually demonstrable by means of the audiometer. One should also remember that a darkening or a bluish coloration in the tympanic membrane often represents a condition of long standing. Such a finding is by no means unusual.

In children who have been referred by schools

for suspected hearing loss, one frequently obtains a history of repeated attacks of ear ache and spasmodic antibiotic treatment. Many of them have thickened, retracted tympanic membranes and a conductive hearing loss of 15 to 35 decibels. Yet, parents have failed to notice the disability, especially if it is present in only one ear. There often are associated problems such as adenoid tissue, nasal allergy or chronic sinusitis, or a combination of those conditions, none of which has been corrected by the administration of penicillin.

THERAPY

In severe instances, a problem can persist for a year or two and require as many as 80 to 120 myringotomies without resulting in a perceptible loss of hearing, and yet we have no means of knowing definitely whether or not it was the myringotomies that preserved the patient's hearing, but it can certainly be presumed so. A semi-permanent perforation can be made in the drum, through which a small tube can be passed for constant drainage, and mastoidectomies should likewise be considered in the treatment of especially chronic problems. But such measures are rather beyond the scope of this paper.

Myringotomy and aspiration are not necessary in all patients. Antihistamines do not seem to be of much value in many cases. Politzeration and Siegel's otoscope are employed in various ways, and sometimes more than one incision may be required if all of the fluid is to be aspirated anteriorly and posteriorly. Politzeration, with therapies to the nose and nasopharynx such as vasoconstrictors, adenoidectomies and sometimes just inflation have sometimes taken care of the problem. But it is in the persistent case—the gelatinous one—that we must consider aspiration. Even a myringotomy without aspiration will not remove gelatinous material from the hypotympanum, and we must remember that the antrum and the mastoid cells are involved in this process, as well as just the middle ear. We have had cases that responded to nothing other than inflation.

We must remember that the ultimate goal is not the creation of a condition in which antibiotic treatment can be administered or in which mastoid surgery can be performed. And it is not enough merely to remove infection through the use of antibiotics. The objective is the restoration or preservation of normal hearing, and the physician must check carefully to make sure either that there has been no hearing loss or that his therapy has restored whatever loss the otitis media may have occasioned. Because the loss may be no more than 10 to 20 per cent, and may have occurred in just one ear, only an audiometric study will reveal it in some instances, especially in children. Tests in which the examiner speaks or whispers to the patient are not definitive in such cases.

Dr. C. M. Kos, of the SUI College of Medicine, has told me that 90 per cent of children with a pure serous otitis media will drain their own fluid through the nasopharynx, and I think that he is right. Thus, I do not recommend myringotomy and aspiration in most cases of simple serous otitities. It is in the persistent case where there is hearing loss and where there has been a deposition of gelatinous mucoid material that I feel aspiration is essential. In many such instances, the aspirated material is so viscous that it strings out to a considerable distance beyond the end of the ear speculum.

In many cases—and this, of course, is the ideal management—chronicity can be prevented by means of adequate therapy during the acute stage. We must remember, then, that in treating the acute case of suppurative otitis media we cannot content ourselves with administering just a single shot of penicillin or a single small dose of another drug, and we must not think that the job is done when the patient is once more asymptomatic. We must follow the ear drum until it is normal and until the patient's hearing is normal. Special attention must be given to infants in whom one has difficulty in detecting residual hearing loss.

It is poor judgment to use a shotgun prescription or any other haphazard treatment for otitis media. And in particular, if complications and permanent hearing loss are to be avoided, it is essential that all who treat this condition be aware of the consequences of inadequate follow-up. We should take many cultures, but even more importantly, we should give special attention to the clinical follow-up, and constantly remind ourselves that it is our function to restore normal hearing.

PROGNOSIS

It has been said that fluid in the ear may remain only for a single day or may persist for a year. One can seldom predict with certainty which patient will be fortunate and which one will not, but in general it can be said that the ear with the greater amount of mucus content presents the greater therapeutic problem. When material is definitely present behind the tympanic membrane, and when it has been observed for a period of reasonable length, it seems unwise to postpone surgery.

CONCLUSION

The physician who treats otitis media with effusion has a dual responsibility to his patient. First, he must do his best to prevent mastoiditis and chronicity, with their hazardous intracranial complications. By means of myringotomy and an adequate use of antibiotics, or vice versa, he can avoid difficulty in the great majority of cases.

His second responsibility, of course, is the conservation of hearing. This, we must emphasize and reemphasize! Otitis media is not just a bacterial infection, but a disease of the hearing apparatus. The products of inflammation, whether purulent or not, must be removed before a permanent hearing loss occurs. The hearing must be carefully checked and

rechecked, and a deafened ear or an ear in which hearing has been impaired represents a therapeutic failure, even though bacteriologically it has been cured.

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Raymond Blank Memorial Hospital for Children

Clinical Conference

Des Moines, April 28, 1957

Dr. Lee Forrest Hill, chief of staff: A transcript of our conference this morning is to be published in the August issue of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY, as a part of a Festschrift honoring Dr. Walter L. Bierring. Dr. Bierring has long been a close friend of the Blank family, and he has maintained a warm interest in the welfare of Blank Hospital since its erection in 1943. I am sure that all of us here at Blank are pleased indeed to have an opportunity of participating in this tribute which he so richly deserves.

For presentation, we have selected four children who have been patients at this hospital. The first two patients are similar in that they suffer from inborn errors of metabolism, but the diagnoses of their ailments are dissimilar. Dr. Baker, would you tell us about the first case?

CASE I: HEPATOMEGALY DUE TO GLYCOGEN STORAGE DISEASE

Dr. John Baker, resident: M. S., a six-month-old white male infant, was admitted to this hospital on November 21, 1956, because of enlargement of the abdomen, which his parents had first noticed when he was three months old. His photograph is shown here as Figure 1. Other than poor weight-gain associated with poor appetite, there had been no apparent symptoms.

The infant is the fifth child of healthy parents. Four siblings are alive and well. The mother's pregnancy and delivery were uneventful, and the infant's birth normal and uncomplicated. His birth weight was seven pounds and two ounces. Evaporated milk feedings, with vitamin supplements, were started when he was two weeks of age. Careful inquiry of the parents failed to elicit any history of such a complaint in any other member of the family.

Physical examination revealed that the largeness of the abdomen was a consequence of the fact that the liver was large enough nearly to fill it. On the right, the liver could be readily palpated at the iliac crest and just above the umbilicus at the mid-line. The surface was smooth and non-tender to pressure. The spleen was not enlarged. There was no evidence of jaundice. No cardiac murmurs were heard, and the heart did not appear to be enlarged. The lungs were clear. The baby's mentality appeared to be normal. Examination of the eye grounds revealed no cataracts, retinitis or hemorrhages.

Before further investigation, the entities considered in the differential diagnosis included: (1) primary liver tumor, such as hepatoma; (2) metastatic tumor, as from a neuroblastoma; (3) one of the reticulo-endothelioses; and (4) von Gierke's or glycogen-storage disease.

A great many laboratory studies were carried



Figure 1. M. S., age seven months. Note protuberant abdomen. The liver was palpable just inferior to the scar from liver biopsy.

out, and some were repeated many times, but the pertinent ones are listed in Table 1. You will note that all are within normal range, with the exception of the fasting blood sugar, total serum lipids, glucose tolerance curve and epinephrine tolerance test. The initial urinalysis revealed a trace of acetone, but this was never found during subsequent examinations.

TABLE 1
LABORATORY FINDINGS IN CASE 1

Total CO_2	40 vols./100 ml 18 mEq./L.
White count	8,200 to 19,200
RBC	4,160,000
Hemoglobin	12.2 grams
Total protein	7.8 Gm/100 ml. albumin 4.4 globulin 3.4
Gamma globulin	0.20 Gm/100 ml. 2.6 per cent of total protein
Serum total lipids	905 mg./100 ml
Total cholesterol	310-470 mg. per cent
Esters	175-270 mg. per cent
Fasting blood sugar	21 mg. per cent
Random blood sugar	140-152 mg. per cent
Glucose tolerance test:	
Fasting	50 mg./100 ml
½ hour	130
1 hour	122
2 hour	160
3 hour	132
4 hour	86
5 hour	46

Epinephrine tolerance test:

	Blood glucose	Urine acetone
Fasting	32 mg./100 ml	No specimen
15 min.	40 mg./100 ml	3 hr. strongly positive
30 min.	38 mg./100 ml	5 hr. strongly positive
60 min.	52 mg./100 ml	7 hr. positive
120 min.	30 mg./100 ml	9 hr. weakly positive

Finding a fasting blood sugar level of only 15 mg. per cent led us strongly to suspect that we were dealing with the hepatic form of glycogen-storage disease. Postprandial blood sugar levels were found to be as high as 140-150 mg. per cent, but they fell sharply into the hypoglycemic ranges when food intake was delayed for any reason. The elevated serum cholesterol levels, initial sharp rise in the glucose tolerance curve followed by a prolonged fall, and the poor response in the blood sugar levels to the injection of epinephrine strengthened our suspicions of glycogen-storage disease. A liver biopsy was done under local anesthesia, and it confirmed the diagnosis.

We have had quite a bit of difficulty with the baby during his hospital stay, as a result of infections of the respiratory tract. But he has improved considerably since being put on the therapeutic regimen recommended for glycogen-storage disease, and he should be ready to be sent home shortly.

Dr. Hill: Dr. Tracy, you have been busy the last few weeks investigating this disease. Would you give us some of the highlights of what you have found?

Dr. Gerald E. Tracy, resident: Glycogen-storage disease of the liver is a congenital defect of carbohydrate metabolism that was first described by von Gierke in 1929 and is often referred to as von Gierke's disease. It appears to be familial, and is inherited as a simple recessive trait.[1] The specific deficiency is due to the absence of the enzyme glucose-6-phosphatase.[2] The enzyme is necessary for the breakdown of glycogen to glucose, and in its absence, glycogen is stored in excess, and abnormalities of the blood sugar follow. In glycogen-storage disease of the heart, however, there is no abnormality of the blood sugar; rather, there is deposition of glycogen in the cardiac muscle.

In 1950, di Sant 'Agnese *et al.*[3] reviewed the literature, and by their strict criteria found that in only 34 of the reported cases had sufficient evidence been presented to substantiate the diagnosis of glycogen-storage disease of the liver. The following findings should be present before the diagnosis is postulated: (1) hepatomegaly; (2) low fasting blood sugar; (3) a flat and prolonged glucose tolerance curve; (4) a flat epinephrine curve (i.e., no response); and (5) elevated cholesterol and serum lipids. With all of this evidence, however, one still cannot make a positive diagnosis, and a liver biopsy should be done. An unequivocal diagnosis can, however, be made when enzymatic studies on the liver tissue have demonstrated a pronounced deficiency or an absence of glucose-6-phosphatase.

It is important to know that in this disease the serum lactic acid level rises as the blood sugar level falls, and that the acidosis that one sees is most often due to an elevation of lactic acid. Thus, the lactates usually employed in the treatment of acidosis are contraindicated in this condition. In a patient with von Gierke's disease, sodium bicarbonate is therefore the treatment of choice for acidosis. Convulsions, which are frequently seen, are related to hypoglycemia, and they are relieved by an elevation of the blood sugar.

Unfortunately, there is no specific treatment for glycogen-storage disease. The treatment that is used is aimed at preventing hypoglycemia and at the same time avoiding marked fluctuations in the blood sugar. It is the current thought that the use of a high protein diet will permit a gradual breakdown to glucose and sustain adequate blood sugar levels for a longer period of time, and at the same time avoid the high postprandial glucose levels that occur after high carbohydrate intake.

Frequent feedings are advocated, day and night. Usual amounts of fat are given. Foods containing galactose are kept at a minimum, since galactose is felt to be largely responsible for the hepatomegaly. For this reason, milk is not used, and Mull-soy or some other milk substitute is used. Vitamins are to be supplied, with special emphasis on the B-complex group. Recurrent infections of a severe nature, especially infections of the respiratory tract, are a constant threat, and when they occur, they are to be treated intensively.

The prognosis varies with the severity of the disease, but in general, the younger the patient is when the diagnosis is made, the worse the prog-

nosis. About 50 per cent of the patients die before puberty, and in those who survive, puberty is delayed. After puberty, however, there is a spontaneous improvement in symptoms, though all laboratory tests remain abnormal.

Dr. Leonard G. Gangeness, Des Moines pediatrician: Were liver enzymes studied in this case?

Dr. Tracy: Unfortunately not. But it is hoped that another biopsy will be done at a future time, and tissue will then be sent to the Coris in St. Louis for enzyme determination. We have consulted the Coris, and they have kindly consented to do this for us.

CASE II. PHENYLPYRUVIC OLIGOPHRENIA

Dr. Hill: Dr. McChesney, would you tell us about our second case?

Dr. Ruth McChesney Yohe, resident: M. G., a 10-month-old white female, was admitted to this hospital on March 6, 1957, for the evaluation of strabismus, which had been recognized when she was 3½ months of age, and a mental and motor retardation, which had first been suspected when she was six or seven months of age. Her mother's pregnancy had been medically supervised, and with the exception of slight spotting during the second month, had been considered normal. The mother was Rh negative, and the baby was Rh positive. Shortly after birth, the baby's direct Coombs' test was negative. Her birth weight was 7 pounds 9 ounces. Outlet forceps had been used in her delivery, but at birth she breathed and cried spontaneously.

The past medical history of the child showed that she had had bronchopneumonia at one month of age, but had recovered from it without complication. She had received routine immunizations. There was no history of convulsions, central nervous system infection or undiagnosed febrile illness. The family history showed that the father had had hay fever. The mother and a four-year-old female sibling were both entirely well. The parents stated that they had been told by an ophthalmologist who checked the child for strabismus at four months that the baby had a severe visual defect.

On physical examination, the child was found to be well nourished, but she seemed more or less unaware of the examiner. Her skin was soft and smooth, and her head, ears, nose and throat were normal. The right eye deviated medially. The pupils were round and equal, and reacted to light and accommodation. Although she responded in such a way as to indicate that she was able to see, she failed to show interest in objects presented to her. The neck was supple. The chest was clear to palpation, percussion and auscultation. The heart rate was 120 per minute, and the rhythm was regular. There was no murmur or cardiac enlargement. Examination of the abdomen revealed no palpable organs, masses or tenderness. The genitalia and extremities were normal. On neurologic examination, the Moro and tonic neck reflexes were absent. Patellar reflexes of the upper extremities were hypoactive. The Babinski reflex was faintly positive bilaterally. The baby was unable to sit by herself, and her head support was poor. Her developmental age was estimated to be approximately that of a four- or five-month-old child.

Laboratory studies showed the hemoglobin to be 12 Gm., the red blood count 4,960,000 and the white blood count 14,200. On urinalysis, the pH was 5.0, and there were 80-100 white blood cells per low-power field. Abnormal amounts of phenylpyruvic acid were demonstrated in the urine by means of the ferric chloride test. The spinal fluid showed two lymphocytes, chloride 130 mEq./L, sugar 50 mg. per cent, and protein 20 mg. per cent. Culture of the spinal fluid showed no growth. The serum calcium was 10.0 mg. per cent, phosphorus 3.4 mg. per cent, fasting blood sugar 67 mg. per cent, and blood urea nitrogen 16 mg. per cent. The tuberculin test was negative. Skull x-rays and an electroencephalogram were within normal limits. A diagnosis of phenylpyruvic oligophrenia was made, and the child was placed on a diet low in phenylalanine.

Dr. Hill: I don't know how many times we've tested urines of mentally retarded children for phenylpyruvic acid in the last 10 years, but certainly a great many. This is the first time, I believe, that we have found a positive result. Cases of this type are admittedly rare, but the test is so simple that it should not be overlooked. The chief problem is to think of it.

Dr. Kelly, what can you tell us about phenylketonuria or phenylpyruvic oligophrenia?

Dr. Thomas Kelly, resident: Phenylpyruvic oligophrenia is an inborn error of metabolism which may account for an estimated 1.0 per cent of mental deficiencies, and has been recognized for more than 20 years as an entity combining characteristic clinical features. They are (1) marked intellectual and behavioral retardation, (2) seizures (either grand or petit mal), (3) hyper-reflexia, (4) hyperactivity and (5) eczematoid dermatitis.[4] The disease is an inherited condition, transmitted by a single autosomal recessive gene. The incidence of phenylketonuria has been variously reported as between 1:21,000 and 1:40,000 in the general population.

The basic defect is apparently an absence or decrease in the enzyme system utilized in the metabolism of phenylalanine (an essential amino acid) to tyrosine. Abnormally large quantities of phenylalanine and breakdown products such as phenylacetic acid, phenyllactic acid and phenylpyruvic acid find their way by abnormal metabolic pathways into the serum, and the serum is excreted in the urine. As a consequence of this metabolic error, phenylalanine accumulates in the blood in concentrations between 20 and 60 mg. per cent, as contrasted with the normal levels of one or two milligrams per cent.

This condition is usually diagnosed following the discovery of phenylpyruvic acid in the urine. The acid can be detected following the addition of 5-10 per cent ferric chloride solution to an acidified urine sample, or after putting a few drops of ferric chloride solution on freshly voided urine on the infant's diaper. The characteristic color is green or grayish green. It must be pointed out that the ferric chloride test has been known to give false negative results, and therefore should not be relied on. An infallible test using 2,6-dinitrophenylhydrazine reagent has been devised and is recommended.* A typical odor due to phenylacetic acid in the urine may be recognized.

Many workers postulate that in phenylketonuria the abnormal metabolites of phenylalanine and even the excessive phenylalanine itself may have a toxic effect on the central nervous system, giving rise to the mental and neurologic disorders.

The disease can be treated by a diet very low in phenylalanine. The diet, while allowing low phenylalanine intake, supplies other amino acids and minerals. An artificial diet containing no more than about 0.1 per cent phenylalanine is necessary because protein foods found in nature almost all contain from four to six per cent phenylalanine.

Patients have shown decreases in blood phenylalanine levels and negative ferric chloride tests after a month or two on a phenylalanine-deficient diet. One should take note of the fact that a protein-free or a low-protein diet cannot be used in treating this disease, for although the patients will show an almost immediate lowering of phenylpyruvic acid, the acid will be excreted in large amounts once again when breakdown of tissue protein occurs.[5] Thus, such preparations as Ketonil,** containing approximately 0.1 per cent phenylalanine, must be used, in addition to vitamins, carbohydrates and supplemental fats. Children with phenylketonuria have been found to tolerate a maximum of 15-20 mg. of phenylalanine per kilogram per day.

Early improvements in behavior, electroencephalograph tracings and seizures are seen in patients treated with the above diet. Improvement shown by infants started on this dietary regimen early in life have been more remarkable than those exhibited by older children and adults.

Although phenylketonuria is rather rare, this disease and galactosemia are two of the inborn metabolic errors that can be relieved by means of strict dietary management. To keep infants from becoming severely retarded is certainly worth the efforts of pediatricians and other physicians who see infants regularly. Certainly, a physician might even consider ferric-chloride urine tests (or the 2,6-dinitrophenylhydrazine test) along with routine immunization for infants from three to six months of age.

Dr. Hill: I wonder whether one should consider doing ferric chloride tests during the newborn period while the infant is still in the hospital.

Dr. Kelly: That question has been discussed in the literature, and I gather that it is not possible to detect phenylketonuria by means of the ferric chloride test during the newborn period. The earliest age at which phenylpyruvic acid has been noted in the urine through the use of the ferric chloride test has been seven weeks, and in that instance the infant was a sibling of a known phenylketonuric.

Some authors state that although the blood phenylalanine may be abnormally high, phenylpyruvic acid will not appear in the urine until the blood phenylalanine exceeds 10 or 15 mg. per cent. Especially if the child appears retarded or has had seizures early in life, one should not accept the negative result of a single ferric chloride test, but should repeat the test several times. We should remember that even in known phenylketonurics there is an ebb-and-flow as regards the amounts of phenylpyruvic acid spilled into the urine.

Dr. Everett Nitzke, Des Moines pediatrician: Does mental improvement parallel motor improvement in the treated children?

Dr. Kelly: Unfortunately, no. Actually, one can expect early motor improvement, but the degree of improvement in the infant's mental status is quite variable and not so marked. Certainly, children treated in early infancy seem to do better than those treated later.

CASE III. ADDISON'S DISEASE

Dr. Hill: The next case is a rather unusual one in pediatric practice. It is of interest to note that the possible diagnosis was entertained by our chief resident, Dr. Kimura, at the time the referring physician first called the hospital. Dr. Larson, will you tell us about this child?

Dr. Walter Larson, resident: W. S., a six-year-old boy, was quite well until one day prior to his admission, when he developed symptoms of a "cold," and failed to eat well. The lad allegedly slept well during the night, but was unresponsive when his mother went to his bedside on the morning of his admission (February 23, 1957). The boy developed seizures which were described as "six jerking movements." The family physician performed a urinalysis, and because he noted "acetone breath," he did a white blood cell count. The urine was reported "negative for sugar, but strongly positive for acetone." The white blood cell count was approximately 23,000. There was no history of trauma, prior convulsions, exposure or ingestion of toxins, extensive vomiting or diarrhea. The patient vomited once on the day prior to admission.

* Add 1.4 Gm. of 2,6-dinitrophenylhydrazine reagent to 500 cc. of 1 N HCl, heat to dissolve and allow to cool. Crystals from this supersaturated solution will settle out. Keep in a dark bottle for indefinite stability. To perform the test, mix equal amounts of reagent and urine, and allow to stand at room temperature for five minutes. A positive test for phenylpyruvic acid is indicated by the appearance of a yellow turbidity or yellow precipitate.

** A phenylalanine-deficient dietary preparation marketed by Merck, Sharp & Dohme.

The family history was negative for convulsive seizures or diabetes.

Physical examination of the boy upon admission to the hospital showed that he was comatose and unresponsive to painful stimuli. He was generally and diffusely "tanned" with hyperpigmentation of areolae, scars and gingival tissues. The blood pressure was 60/30 mm. Hg., the pulse was 130 beats per minute and the respiration rate was 28 per minute. There was no acetone odor to his breath. The pupils were equal, and reacted slowly to bright light. On examination of the fundi, the discs were visualized, the margins were clear and the vessels were normal. A neurologic examination revealed generalized hyporeflexia and unconsciousness. Examinations of the chest and abdomen were negative. Blood was drawn for emergency chemistries.

The patient went into shock, a cut-down was done, and approximately 400 cc. of N/3 saline in five per cent dextrose was given quickly. Medications consisted of 150 mg. of intravenous hydrocortisone (Solu-Cortef) and a digitalizing dose of Cedilanid. Within approximately 45 minutes, the lad was conscious. He then started asking for his mother, and when she came to his bedside shortly afterward, he was able to recognize her and seemed well oriented as to persons.

A lumbar puncture was negative for cells (one lymphocyte), and was clear. The spinal-fluid sugar was 21 mg. per cent, the protein was 14 mg. per cent and the chloride was 106 mEq./L. The emergency blood chemistries were as follows: carbon dioxide 9.6 mEq./L., sodium 136 mEq./L., potassium 8.1 mEq./L., chloride 105 mEq./L., calcium 13 mg. per cent, phosphorus 8.3 mg. per cent, blood sugar 29 mg. per cent, and blood urea nitrogen 50 mg. per cent. A guaiac test of the vomitus was positive. The blood counts were as follows: red blood cells 4,770,000, hemoglobin 13 Gm., and white blood cells 14,850, with 52 per cent neutrophils, 2 per cent neutrophil bands, 33 per cent lymphocytes, 6 per cent monocytes, 1 per cent basophils and 6 per cent eosinophils.

A detailed history of the patient's past medical history revealed the fact that this youngster had always been "darker" than his sibling, but the family had regarded that difference as insignificant. The lad had always shown a preference for salty food such as peaunts, potato chips, etc., and had used more table salt than the rest of the family. In contrast with his sibling, he had never liked candy or other sweets. He had always been a "poor eater," and couldn't match the activity of his school chums. He had seemed chronically to be tired and to "wear out easily."

Roentgenograms of the chest, skull and abdomen were entirely normal, except for microcardia. The bone age, according to Todd's atlas, was equal to that of a normal six-year-old.

The electrocardiograms taken on admission and on the second hospital day were interpreted as "abnormal tracings, with indications of some acute myocardial process." Repeat cardiograms on the sixth hospital day were entirely normal. The patient was given 10 per cent dextrose in normal saline until, after 48 hours of intravenous alimentation, he was able to tolerate oral feedings. Desoxycorticosterone, 1 mg. intramuscularly, was administered daily. A "salt cocktail"[6] equivalent to one gram of salt was given twice daily, and prednisone (Meticorten), 30 mg. orally, was given daily. The prednisone was deceased gradually to 5 mg. daily at the time of the patient's discharge from the hospital.

The boy's appetite picked up remarkably, and he became quite alert and generally surprised his parents with his improvement.

The blood culture taken on admission was reported as negative. A urinalysis and a repeat white blood cell count were within normal limits. Both the tuberculin and the histoplasmin skin tests were read as negative. A summary of the blood chemistry determinations is given in Table 2.

TABLE 2

SUMMARY OF LABORATORY FINDINGS, CASE 3

		Admission		
	Normality	*1 p.m. 2/23/57*	*9 a.m. 2/24/57*	*9 a.m. 2/25/57*
CO_2	20-30	9.6	9.9	21.
Na	130-145	136	134	
Cl	95-110	105	106	
K	3-5	8.1	6.2	4.8
Ca	8.5-11.5	13.	11.7	
P	3-5	8.3	4.6	
Glucose	70-110	29.	179. (IV fluids)	
BUN	10-18	50.	21.	

Dr. Hill: In spite of the rarity of Addison's disease in children, we felt that our findings well confirmed such a diagnosis. Dr. Duffie, what can you tell us about Addison's disease in children?

Dr. Edward Duffie, resident: Although the accumulation of signs and symptoms that make up the clinical picture of Addison's disease is well known, its occurrence in children is relatively rare. The etiology of the disease is likewise obscure. Up to 15 years ago, the principal cause was tuberculosis, but since then, tuberculosis has declined in importance, as far as this syndrome is concerned. Talbot,[6] in discussing a series of his own, lists only one case in which Addison's disease in a child was known to have been tuberculous in origin. In many instances, no specific etiology can be demonstrated. Histoplasmosis has been implicated occasionally.

The treatment of Addison's disease seems less formidable than one might expect. It is, of course, an oversimplification to say that all one needs do is to supply the missing hormones and perhaps a little salt. As a matter of fact, the control of a patient with adrenal insufficiency should present no more of a problem than does the management of a diabetic. There are several aspects of the problem, however, that deserve special mention. Ideal-

ly, the patient should be able to maintain a normal weight gain and then hold it. He should have a sense of well-being, and have a normal resistance to everyday environmental stress and to the stresses of infection. If properly controlled, he will have a normal electrolyte balance and be free from hypoglycemic shocks.

With these goals in mind, let's turn our attention to the current concepts in the treatment of the disease. An important first step is the education of the parents and of the child, if the child is old enough to understand. They must know that the margin between being well and being gravely ill is very narrow. They should be taught, if possible, the signs and symptoms of both under- and overdosage of the controlling medications. They should be made aware that the stress of infections and trauma may lead to crises, and they should be prepared to administer extra medication as the need arises. We have carried out the same sort of "family education" with the parents of adrenal-deficient children as with the parents of child diabetics. It is most essential.

It is customary to think that the treatment of Addison's disease consists of two parts: first, dealing with the acute crisis, and second, maintaining the patient afterward. I shall take up the acute episode first. When a patient who is known to have Addison's disease comes to the hospital in a crisis, or on the arrival of a child whose history and physical examination have led the physician strongly to suspect Addisonism, blood should be drawn and the following determinations made: (1) serum sodium; (2) potassium; (3) calcium; (4) phosphorus; (5) carbon dioxide combining power; (6) chloride; (7) blood urea nitrogen; and (8) blood sugar. Also, the blood should be typed and crossmatched for a possible transfusion. After the blood has been drawn, intravenous fluids should be started, or if a good vein is not available, a cut-down should be done. Since the coma and/or convulsions may very likely be the result of hypoglycemia, and since the patient invariably will need sodium and chloride, a solution of 10 per cent dextrose in normal saline should be started intravenously. Recent work tends to support the theory that a hypertonic saline solution is best. Despite the extracellular dehydration, there is intracellular edema in these patients, and they need the electrolytes more than they need the water. For this reason, the hypertonic solutions, in all probability, will soon be used exclusively. In addition to the above fluids, which are calculated on the basis of about 2200 cc./M^2/day,* the first 24-hour requirements also include from 1.0 to 1.5 mg. of DOCA in oil/M^2/day, given intramuscularly. From 60 to 120 mg. of cortisone/M^2 may be given in the intravenous fluids.

These three things, then, are the basis of the initial therapy: salt, DOCA and cortisone. If the patient is in a coma, one also administers glucose. From eight to 24 hours afterward, the patient will exhibit a marked improvement, and he can then be given oral fluids and diet, and the focus of therapy shifts to the maintenance requirements of the patient. The cortisone will gradually be lowered to maintenance levels of around 10 to 20 mg./M^2/day; the DOCA will be reduced to about 1.0 or 1.5 mg./M^2/day, and the salt will be cut down to about 2 or 3 Gm./M^2/day.

Recently, halogenated hydrocortisone has been studied in this connection at several centers, and it has been found extremely useful. Most promise has been shown by 9-alpha-fluorohydrocortisone and 9-alpha-chlorohydrocortisone, and they can be taken orally. These two drugs not only have great capacity for metabolizing sugar, fat and nitrogen, but are superior to the parent compound hydrocortisone in that they markedly facilitate salt retention. This single oral chloro-derivative of hydrocortisone may preclude the taking of salt, DOCA (either intramuscularly or in pellet form), and cortisone in the treatment of chronic adrenal insufficiency.

Dr. Hill: This certainly is a very interesting case. Personally, I have never seen a case of Addison's disease in children in my 36 years of practice. We are very fortunate in having Dr. Lawson Wilkins, of Baltimore, here with us. Dr. Wilkins, do you think we should do any definitive diagnostic test to make sure of the diagnosis? We did none, since we felt that the diagnosis had been established by the clinical and laboratory findings.

Dr. Lawson Wilkins, Johns Hopkins Hospital: I am certainly very glad that you did *not* do any provocative diagnostic tests, because in Addison's disease the administration of intravenous ACTH to determine the response of the plasma and urinary 17-hydroxycorticoid often causes a severe, and occasionally fatal, hyperpyrexic reaction. All of your laboratory findings, the clinical findings and the therapeutic response of the patient clearly point to the diagnosis of Addison's disease.

Addison's disease is indeed rare in children, and I have seen only two cases. It would be of interest to determine the level of urinary corticoids after taking the patient off cortisone or prednisone for a period of two weeks. We shall be glad to do this test for you, if you can obtain a 24-hour collection of urine after keeping the patient on only DOCA and sodium chloride for about two weeks, and send us an aliquot in frozen state. I believe that Dr. Robert Blizzard has already written you in regard to this test. After we have obtained the results, I would be very much interested in treating this child with 9-alpha-chlorohydrocortisone orally.

* Where M^2 represents the patient's body area expressed in square meters.

CASE IV. MOTOR RETARDATION

Dr. Hill: The last case for this morning will be that of a child who apparently has motor retardation. Dr. Anderson will present it.

Dr. Robert Anderson, resident: D. W., a 14-month-old male infant, was first admitted to this hospital on August 8, 1956, because he had lost his ability to sit up, and would not stand alone. The child is a product of an uncomplicated pregnancy, and his neonatal period was completely uneventful. Feedings consisted of evaporated milk formulae, with dextri-maltose and multivitamin supplements. His birth weight was 8 pounds 15 ounces, he ate well and he gained consistently to his present weight of 20 pounds 4 ounces. He had held his head up at three or four weeks of age, followed objects at four or five weeks, grasped things and smiled at six weeks, and sat up alone at six months. But after reaching the age of six months, the child developed minimally. At present, he does not pull himself to a sitting position or standing position with support. He does not wave "bye-bye" or use his hands to play "patty cake." When sitting alone, he slumps, and he is quite fussy and irritable.

Physical examination revealed a chubby, well-developed, well-nourished 14-month-old male in no distress and lying in his crib. Rectally, his temperature was 100°F., his pulse was 88/min., and his respirations were 30/min. His height was 27 inches and his weight 20 pounds 4 ounces on admission. Specific examination was negative, except for (1) flaring of ribs, with definite appearance of rachitic rosary, (2) protuberant abdomen (rachitic potbelly?), and (3) moderate kyphosis in the lower thoraco-lumbar spine.

The initial laboratory findings were as follows: red blood count 3,600,000; hemoglobin 10.6 Gm.; and white blood count 6,550, with 79 per cent lymphocytes, 11 per cent monocytes, 8 per cent neutrophils and 2 per cent eosinophils. The admission urinalysis was unremarkable. Daily urinalyses showed clear urine with specific gravities ranging from 1.016 to 1.030, negative microscopic findings, and negative tests for sugar, albumin and calcium. The stools were negative for excess fat, and positive for trypsin in dilutions of 1:5 and 1:100. The total cholesterol was 178 mg. per cent; the blood urea nitrogen was 10 mg. per cent; the calcium was 8 mg. per cent; the phosphorus was 1.9 mg. per cent; and the alkaline phosphatase was 190 King-Armstrong units. The cephalin flocculation was negative at 24 and 48 hours; the thymol turbidity was two units; and the total protein was 6.7 Gm. per cent. The blood electrolytes were as follows: plasma carbon dioxide content 19 mEq./L. (42 volumes per cent); sodium 139 mEq./L; potassium 5 mEq./L; chloride 113 mEq./L; and plasma pH 7.3. The blood smear showed adequate platelets. Erythrocytes were said to show moderate anisocytosis and hypochromia. There was a predominance of large lymphocytes, with no atypical cells. The pathologist described the peripheral smear as indicating "lymphocytosis of unknown etiology."

Dr. Hill: At this point, I should like to have Dr. Burcham, of the Radiology Department, show us the x-ray films taken of this child.

Dr. Thomas Burcham, Jr., Des Moines radiologist: The roentgenograms of the trunk, skull and extremities demonstrate an extensive dystrophy involving both tubular and flat bones. The changes are most apparent in the tubular ones and in the ribs, where there is a marked absence of normal radio-opaque bone salts. This dystrophy has the characteristic appearance of osteomalacia, with widening of the bone shafts, cortical thinning and prominence of the heavier bone trabeculae. Many gross fractures, particularly in the forearms, have caused mild deformities. Extensive periosteal reaction is present, but calcifications of new osteoid have not been identified. The metaphyses are greatly distorted, with cupping and fraying. The epiphyseal centers have been delayed in their development, and the distance betwen the epiphysis and the end of the shaft has been increased in some instances. All of these bone changes are consistent with infantile rickets.

Dr. Hill: Now, I should like to call upon Dr. Kimura to discuss the diagnosis, treatment and follow-up of this interesting patient.

Dr. Kazuo K. Kimura, resident: First of all, before I proceed with a discussion of rickets, I should like to report that this baby was started on daily doses of 50,000 international units of vitamin D. The parents were taught to carry out Sulkowitch urine tests[7] three times weekly for evidence of urinary calcium. The baby was sent home from the hospital on the twelfth hospital day, and arrangements were made for the attending pediatrician, Dr. Leonard Gangeness, to follow him monthly in the Outpatient Department.

I should like to say a few words about rickets in children, and then quickly develop our working diagnosis of vitamin-D-resistant rickets. Rickets develop when the short ultraviolet waves from the sun fail to reach the individual, but at the same time, vitamin D must be lacking from his food. It is well known that the anti-rachitic effect need not be accompanied by a tanning of the skin. Rickets can occur at birth, but does so no more than rarely—probably only when the mother has osteomalacia. After birth, the earliest occurrence to be found in the literature has been at one month and four days. The case was reported by Dunham in Baltimore. It may be that patients with rickets under the age of two months are rare because the disease requires that length of time to develop to the point where it can be recognized.

Now let us direct our attention to the positive laboratory findings in the patient now under dis-

cussion. The blood calcium is within normal range for children, though perhaps in the lower part of the normal range. The remarkable finding of 1.9 mg. per cent phosphorus deserves attention, for the normal for this age is about 5.5 mg. per cent. The alkaline phosphatase levels of 190 and 264 King-Armstrong units are likewise interesting, for the upper range of normal for this age is about 15-20 units. All of the other laboratory findings seem to be in order, with no evidence of hepatocellular damage, renal damage or electrolyte disturbance.

The combination of normal calcium, low phosphorus, high alkaline phosphatase, roentgenograms consistent with infantile rickets and clinical evidence by physicial examination all point to one possible diagnosis—some form of rickets. Since there had been adequate multivitamin supplement in the child's diet, we certainly could eliminate simple avitaminosis D rickets. Renal rickets could be ruled out by (1) the patient's ability to concentrate his urine up to a specific gravity of 1.030; (2) no evidence of consistent albumin or casts in the urine; (3) low serum phosphorus; and (4) a normal blood urea nitrogen of 10 mg. per cent. A clinical entity called rickets with hypophosphatasia was quickly ruled out by the high alkaline phosphatase level in our patient. Hypothyroidism was ruled out by the normal cholesterol level and the lack of clinical evidence. Blood dyscrasia was ruled out by an examination of the blood smear and the roentgenograms. Such diseases as vitamin D resistant rickets with glycosuria, hyperparathyroidism, malignant bone growth, marble bone disease, Gaucher's disease and simple healing fractures which would all show high alkaline phosphatase levels were ruled out to our satisfaction by the clinical and laboratory findings. Phenylketonuria was ruled out by several negative ferric chloride reactions with urine. A working diagnosis of vitamin-D-resistant rickets was made, and the child was placed on a therapeutic trial with large doses of vitamin D, as I have said.

Vitamin D resistant rickets was first recognized as a distinct clinical entity by Albright, Butler and Bloomberg[8] in 1937. It is also known as phosphate diabetes, essential hypophosphatemic rickets and idiopathic osteomalacia. It may present all of the cardinal features of single avitaminosis-D rickets. Recently Freeman and Dunsky,[9] and Fanconi and Girardet[10] have theorized that vitamin D rickets may result from an inability of the proximal renal tubules to reabsorb proper amounts of phosphates in the presence of normally adequate antirachitic doses of vitamin D. The main feature of this disease is that larger doses of vitamin D than are normally used in the prophylaxis of avitaminosis-D rickets are necessary if one is to achieve an adequate therapeutic re-

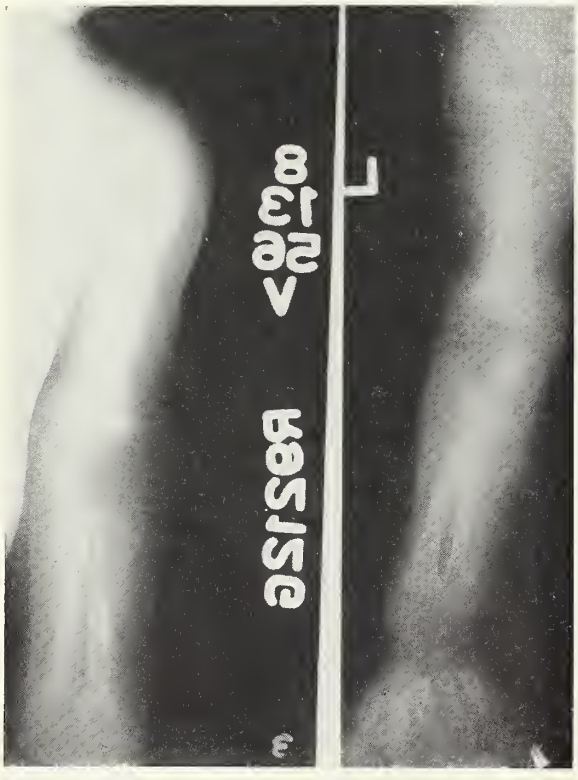


Figure 2. Admission roentgenogram on patient W. S., illustrating changes described in the text.



Figure 3. Improvement in patient W. S. This x-ray was taken eight months after the one shown in Figure 2.

sponse. Reed[11] claims that the human being can tolerate 20,000 units of vitamin D per kilogram of body weight per day indefinitely. The case reported by Albright, Butler and Bloomberg was a child requiring up to 1,500,000 units of vitamin D daily to show therapeutic response.

Gardner[12] notes that there are fewer than 40 cases of vitamin-D-resistant rickets that have been recorded in the literature. Obviously, there must be many that have not been reported. The present case showed definite clinical and roentgenographic evidence of improvement on the top dose of 100,000 units of vitamin D daily, and did not show evidence of spilling calcium into the urine until the fifth month after the start of therapy. There were no signs of overdosage of vitamin D such as calcium casts, serum calcium greater than 12 mg. per cent, nausea, headache, profuse sweating, anorexia or increased urination.

Marked improvement was observable in roentgenograms of the skeleton (Figures 2 and 3), and there were definite chemical changes (Table 3), along with clinically observable improvements such as the child's learning to walk, his eating better and his becoming less irritable. All of those results seem to verify our original working diagnosis of vitamin-D-resistant rickets.

Dr. Hill: It was quite gratifying to see how well this patient responded, both chemically and clinically, to the rather high doses of vitamin D.

Are there any comments or questions?

Dr. Charles Burr, Des Moines pediatrician: What happens to these children with vitamin D rickets?

Dr. Kimura: These children require high levels of vitamin D during infancy and during adolescent growth spurts. In most instances, no supplemental vitamin D is required after growth has stopped.

Dr. Charlotte Fisk, Des Moines pediatrician: What do you do if parents report a positive Sulkowitch test, as the parents of this child did on January 11 (Table 3)?

Dr. Kimura: If there are several 4+ reactions, we check the urine ourselves, and the serum calcium concentration is measured. Hypercalcemia is an indication for the reduction of vitamin D dosage. A flat plate of the abdomen and an intravenous pyelogram were obtained in this patient, and there was no evidence of calculi. To avoid hypercalciuria and hypercalcemia, close supervision is mandatory when the patient has been immobilized for an appreciable time. The physician should be alert for any evidence of renal disease.

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TABLE 3

CASE 3. VITAMIN D RESISTANT RICKETS

Date	*Number Months of Rx*	*Vit. D Dose* Daily*	*Blood* *Ca*	*P*	*Alk.*	*Ph.***	*Urine Sulk.*	*Remarks*
8/ 8/56	0	0	8.0	1.9	190	KA	neg	X-ray evidence of rickets
(Adm.)	0	0	9.5	2.0	264	KA	neg	
9/17/56	1	80,000	9.0	2.7	171	KA	neg	Some healing of pseudofractures.
10/26/56	2	100,000	9.9	5.6	80.5	KA	neg	New bone formation.
11/23/56	3	100,000	10.3	4.7	37.5	KA	neg	Baby sits up; walks with help; further improvement in X-ray.
1/11/57	5	25,000	10.5	4.5	23.2	KA	pos	Baby walking well; No calculi seen in KUB or IVP; ossification and calcification progressing.
4/ 5/57	8	50,000 Weekly	9.4	2.5	60.5	KA	neg	Climbs stairs well.

* Vitamin D dose in International Units/day.

** Alkaline phosphatase in King-Armstrong units (N = 15-20). With 8 months of therapy, weight increase = 5½ pounds and height increase = 4 inches.

MEDICAL HISTORY



The Medical Library Club

TOM BENTLEY THROCKMORTON, M.D.

DES MOINES

In about 1910, a number of young physicians located in Des Moines and began the practice of medicine. They were graduates of reputable medical schools—Rush Medical College and Northwestern University Medical College of Chicago, and the Medical Department of the State University of Iowa and Jefferson Medical College of Philadelphia. Why they chose Des Moines as their field of endeavor is a question that only they could answer, each for himself. From Iowa City came John H. Peck, internist; from Chicago came Daniel J. Glomset, pathologist, Lawrence E. Kelley, obstetrician, and John T. Strawn, gastroenterologist; and I, a neurologist and psychiatrist, came from Philadelphia. The five of us were responsible for the founding of the organization which later came to be known as the Medical Library Club.

At that time, the Medical Department of Drake University was a going concern. The building that housed the medical activities of the University was located at Fourth and Center Streets. After the demise of the Drake Medical Department in 1913, the building was taken over by the city and used as a charity hospital until Broadlawns General Hospital was erected. These five young practitioners became connected with the Medical Department at Drake. Dr. Glomset became professor of pathology, and the rest were associates in their respective specialties. For instance, I taught neurology and temporarily was professor of that subject, during the absence of Dr. Frank A. Ely, who went abroad in the fall of 1912. Dr. Peck, similarly, was the shadow of Dr. Walter L. Bierring, professor of medicine, who brought his prestige with him when he came to Des Moines from Iowa City in 1910. Dr. Strawn was interested in diseases of the digestive tract, and Dr. Kelley's interests were in the field of gynecology and obstetrics.

It was good fortune which drew those five young men together in a common cause. Each was intensely interested in the profession of medicine, and even more so in the specialty in which he had been trained. As they worked along in a common endeavor at Drake, it was but natural that they were drawn together and that they developed a deep respect for one another's abilities. As a result, by degrees, they formed themselves into a natural union—not a trade union, but a union for their mutual betterment as practitioners and teachers, and for the advancement of the art and science of Medicine. Just which of them it was who first suggested the formation of such a group is not clear at this date. In all probability it was Dr. Glomset, for it was at his home that the group held its first social function. Be that as it may, the "little five" organized, and the Study Club came into being late in 1912.

The members promptly decided to hold regular and frequent meetings, and those gatherings took place at the Medical Department, either in the library or in one of the classrooms. The programs consisted largely of individual case reports or reviews of articles that had appeared in current medical journals or books. In this manner, the members kept one another well informed as to what was going on in their respective specialties —internal medicine, pathology, obstetrics, and nervous and mental diseases.

The Study Club had not been in existence for many months before it began to attract attention, and the reaction of the other doctors in town was by no means unfavorable. Dr. Arthur Steindler, professor of orthopedic surgery at Drake, was the first to seek admission. When the five members heard his knock upon their door, they were somewhat apprehensive. The Club had no rules for the reception of members, and indeed the "little five" had never considered the possibility of enlarging their number. They discussed the matter, and came to the conclusion that admission requirements should be exacting, so that the standards and ideals of the club might be protected. The consensus was that a prospective member should be put on probation for six months and would then have to prove himself worthy by reading an original thesis before being admitted to full membership. Dr. Steindler acquiesced to the arrangement, fulfilled the conditions and was admitted to membership. He was the first and only new member whom the Study Club ever received. Since then—now some 40-odd years ago—Dr. Steindler served until recently as professor of orthopedic surgery at the State University of

Iowa, with credit to himself and reflected honor to the medical profession of Iowa and of the nation. Although long a resident of Iowa City, he has never lost interest in the Club, and though its name has been changed, he still retains his membership.

SUDDEN METAMORPHOSIS

As the 1913 school year came to a close, it became evident that the Medical Department of Drake University would not reopen its doors in the autumn. The standards essential for high-grade medical colleges could no longer be maintained because of a shortage of funds. Thus, the Study Club lost its rallying place. Fortunately, however, the members did not scatter, and their incentive for continuing their meetings remained. Indeed, the demise of the Drake Medical Department seemed to cement the little band of medical workers even more firmly, and it determined to carry on as of old. Other ex-members of the faculty then began casting about for a similar means of maintaining their interest in medical research, and Professor Bierring became the chief proponent for the formation of an Academy of Medicine, or some similar organization with a comparable title. Professor William W. Pearson, of the Department of Ophthalmology, Otology and Rhino-Laryngology and former dean of the Drake Medical Department, opposed that idea. Evidently he had heard of the doings of the Study Club—including the gamut which Dr. Steindler had been required to run—and he proposed that all of the other ex-teachers of Medicine join it. His suggestion was adopted, and before the "little six" knew what had happened, the pseudo-pod of the faculty ameba had enclosed them. When the Study Club had been digested, it came forth as the Medical Library Club. I was president of the Study Club at the time of its metamorphosis, but chanced to be out of town at just that time. When I returned, I discovered a new medical home waiting for me.

Thus the Medical Library Club rose from the ashes of the Drake Medical Department, and a better thing couldn't have happened to the medical profession of Des Moines. The faculty had been left stranded and demoralized, and besides, there was some factionalism among the doctors in the city—a condition far too prevalent among physicians years ago, but now no longer to be found, thanks to the influx of better trained and qualified men into the ranks of Medicine. The formation of the Medical Library Club had a very salutary effect both on the old faculty and on the rest of the local profession.

The new organization brought together a group of men who were intensely interested in their profession. The inclusion of older men improved the organization, for they could contribute knowledge derived from experience to leaven the theories that were the stock in trade of the younger members. All profited mutually from that combination. Dr. James Taggart Priestley, the Nestor of the profession; Dr. Bierring, an educator, teacher and clinician; Dr. Eli Grimes and Dr. Addison C. Page, internists and obstetricians; Dr. Charles M. Werts and Dr. William W. Pearson, ophthalmologists, otologists and rhino-laryngologists; Dr. Oliver J. Fay, Dr. Wilton McCarthy and Dr. John C. Rockafellow, surgeons; Dr. Harootune A. Minassian, general practitioner; and Dr. Ely, a neurologist and psychiatrist—theirs were among the new faces that greeted the members of the old Study Club when its successor, the Medical Library Club, met for the first time.

From time to time, a new member was taken in when it was evident that the man had some *distinct qualification which would add to the scientific acumen of the Club and that he was a good fellow whose presence would integrate without jolt or jar into the workings of the organization.* For many years, the membership consisted of between 20 and 25 physicians, but its roster now includes 67 members, 18 of whom are senior members and 49 are active members. The privilege of voting is restricted to those members who have been present at three-fourths of the meetings held during the previous year. Formerly, the penalty for excessive absences was expulsion, but now this deprivation of voting rights is the only penalty that is assessed.

CHANGES OF MEETING PLACE

The meeting place of the Medical Library Club has changed several times during the years. First, it met on the twelfth floor of the old Equitable Building, the structure which is now the Bankers Trust Building, at Sixth and Locust Streets, in a room adjacent to the office suite of Dr. Rockafellow. It soon became evident that larger accommodations were necessary, and the Masonic Temple Building, at Tenth and Locust Streets, was used. Next, suitable space was found on the ninth floor of the old Equitable Building, and the Club continued to meet there until it moved—together with its large oval oak table—to the State Medical Library, in East Des Moines. After a year, the members came to the conclusion that East Des Moines was too far away from the homes and offices of most of them. So, leaving the table as a token of good will to the State Medical Library, the Club moved once again, this time to the Chamber of Commerce rooms in the Savery Hotel. More recently—but quite a number of years ago—it began meeting at the Des Moines Club, and there it has met ever since.

Meetings have always been held during the fall, winter and spring months, beginning in late September or early October and ending in late May or early June. No meeting is scheduled for the week of the Polk County Medical Society's monthly meeting, and there is likewise none during the week of the State Medical Society's annual program. Thus from the beginning, the Club has held about three meetings a month, and I recall two instances early in its history when a member

was expelled for missing two meetings without sufficient cause.

The early programs began at 8 p.m. and usually consisted of two papers each, but at times the presentation and discussion of the first paper consumed so much time that the second essayist could do no more than give a synopsis of his manuscript or postpone delivering it. The scientfic content of the paper wasn't the only thing that was subjected to criticism. The member's manner of presentation was commented upon, and his pronunciation of terms came in for some wholesome consideration. On the oval table previously referred to, the Knights of Scientific Medicine kept Webster's unabridged dictionary, and he who questioned his fellow-member's use of the English language was privileged to take his case to court and allow the decision to rest with Judge Noah Webster. It ill behooved a member to come unprepared or to be nonchalant in his presentation. To do so was to meet trouble head-on.

To the early members, the Club afforded opportunities for listening to papers and talks on internal medicine, surgery and the various other specialties. Even more, it provided a sounding-board before which a member who was due to present a paper before a larger medical group could try out both its content and his delivery. The men who composed the group were both able and willing to give him constructive criticism, and if his paper passed the test, he could feel sure that it would be well received elsewhere.

CHANGES IN PROCEDURE

For years, it was the custom for the members to entertain the Club in their homes. There usually were one or two such occasions each year. More and more, these social gatherings brought the members close together, for what man can sup another's wine and partake of his hospitality without feeling that his kinship with him has increased? But these gatherings have ceased since the meeting place was changed to the Des Moines Club. There, the set-up is ideal, for the members are enabled to dine comfortably, to enjoy a period of social intercourse and to get on with the scientific program with dispatch. Just one paper now is heard during an evening.

Perusal of the membership roll of the Medical Library Club reveals the names of many eminent physicians who practiced, or are still practicing, in Des Moines. Many of the leaders of the Polk County Medical Society are on the list, some of the past-presidents of the Iowa State Medical Society were, or are, connected with the Club, and the current ISMS president belongs to it. There even is one member who, among the many medical honors that he has achieved, has been president of the American Medical Association. Others have served as delegates to the AMA, and two have served as section chairmen in the body. Some members have brought credit to the Club by serving as leaders in various ones of the specialty groups or other medical organizations. This record indicates the Club has been wisely selective in the men whom it has admitted, and suggests that it has had a part in keeping them industrious and forward-looking.

In 1949, an individual who wished to remain anonymous presented the Club with a trophy in the form of a cup, in the hope that it might be used to stimulate competition among the essayists. At the end of each year since then, the talks and papers are judged, and the cup is engraved with the name of the member whose contribution is thought to have been most significant. Dr. Daniel J. Glomset was the first honoree; Dr. Kenneth Cross was declared winner for 1951; Dr. Charles Latchem, for 1952; Dr. Tom D. Throckmorton, for 1953; Dr. Parker K. Hughes, for 1954; Dr. Joseph B. Priestley, for 1955; and I, for 1956. Dr. William H. Myerly and Dr. John E. Gustafson were awarded the honor this year for their original work on cardiac septal defects.

The Club has provided ample facilities for its speakers. An excellent projector is available when either lantern or microscopic slides are to be thrown upon the screen. The old, hand-made reading table was replaced a few years ago by a movable lectern, the gift of a member. All-in-all, the members ever have been on the alert to keep the physicial property of the Club well abreast of the times.

It is of interest to note that three of the founders of the old Study Club have worthy sons who are helping to carry on the traditions of the Medical Library Club. I refer to Dr. Daniel Anders Glomset, Dr. Tom Dercum Throckmorton and Dr. John H. Kelley. The last named of those three is the most recent addition to the Club's membership. In addition, four of the older members of the Club, Drs. Minassian, Burcham, Downing and Posner have likewise contributed sons to the membership, and the name of Priestley is on the roll, representing a grandson who has carved a niche for himself in the surgical field. As time goes on, doubtless other members will add their contributions of flesh and blood to this fine institution.

What of the future of the Medical Library Club? Will it continue to grow and prosper, or will it gradually become soft and pass out of existence like so many other medical organizations? Having watched its growth and progress from its inception, I feel I am in position to state with certainty that it will continue to be the cradle of medical thought in Des Moines just as long as it holds to the principles and traditions that were given to it by its founders and by the men who guided it through its formative years. They gave the institution its birth and nurtured it during the early period of its existence. Most of those men have departed from our midst, but each has left his indelible imprint upon this unique body.



WALTER L. BIERRING, M.D.

The opportunity of preparing an editorial for a Festschrift is denied to most medical editors. This, in fact, is no more than the second such number in the 47-year history of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY. The first was published on October 15, 1915, and it honored Dr. Joseph Taggart Priestley. Fortuitously, the first honoree's grandson, Dr. Joseph B. Priestley, is the author of the biographical sketch of Dr. Bierring that opens this issue.

The word *Festschrift* is frequently used as the title of collections of scholarly papers written by the pupils, friends and associates of men whose accomplishments have been extraordinarily praiseworthy.

It was customary in Germany to honor only those scientists who had attained their 70th birthday; our colleague, having attained the age of 89, uniquely qualifies for this honor.

At the suggestion of Dr. Harootune A. Minassian recently deceased, who had been one of the contributors to the Priestley Festschrift, his son, Dr. Julian M. Bruner, then president of the Medical Library Club, appointed a special committee consisting, in addition to himself, of Dr. Lee Forrest Hill, Chairman, and Drs. R. F. Birge, Daniel A. Glomset, Joseph B. Priestley, and Everett M. George to prepare an issue of the JOURNAL honoring Dr. Bierring.

Two contributors to the Priestley issue are still living. Dr. Arthur Steindler was prevented by ill health from preparing a paper. Dr. Thomas B. Throckmorton has contributed an excellent history of the Medical Library Club.

In perusing the articles, the reader cannot fail to see the imprint that Dr. Bierring has put upon the medical affairs of his time, and to be impressed by the range of his activities and the remarkable breadth of his interests.

The panoply of honors that have descended upon Dr. Bierring rests lightly upon his shoulders. Indeed, he wears the purple as if he were "to the manor born." We congratulate him upon his achievements, and we extend to him the best wishes of the readers of the JOURNAL upon this happy occasion.

BIRTH AND DEATH CERTIFICATES

In eastern states recently, some physicians were criticized for their tardiness in filing birth and death certificates, and it may perhaps be opportune that we recount it, on the chance that there are Iowans guilty of similar sins of omission.

A North Carolina Medical Society newsletter stated that over 12 per cent of the regular birth certificates signed by physicians in that state in 1956 were filed one or more months late. Some of them were years late. During the same year, 56 per cent of the death certificates were signed after burial had taken place, and 17 per cent were one or more months late.

In Reading, Pennsylvania, during an informal discussion at a meeting of doctors and funeral directors, doctors were criticised for not keeping a supply of death certificate blanks on hand, and of requiring that the funeral director send someone to pick up the death certificate in each case. One of the physicians present remarked, "If we expect their help, we should be willing to return an equal measure of cooperation."

THE REMEDIAL EYE CARE PROGRAM IN IOWA

Iowa has a good program for financing the remedial eye care that is given by local physicians, but it appears that more use should be made of it. At the present time no more than 17 children under 18 years of age are receiving remedial treatment at state expense, and since the relieving of an eye condition early in life is certain to be of inestimable benefit to patients, the State Department of Social Welfare urges all physicians to help in case finding. Doctors may call a county welfare worker when they wish to arrange for the financing of such care for a medically indigent patient, or they may ask the patient or a member of his family to do so.

Iowa has two social agencies that interest themselves in work with the blind or near-blind. The State Commission for the Blind administers rehabilitation programs; The State Department of Public Welfare gives aid to the blind and disburses state funds for remedial or preventive medical treatment. In July, 1940, the latter agency's case load was 41 persons, and it spent $3,652 during that fiscal year. In July, 1956—16 years later—its load was 526 persons, and during that most recent fiscal year, it spent $51,492.

The Iowa Aid to the Blind Law provides for remedial services to any person who meets the following requirements and is in need of treatment either for the prevention of blindness or for the restoration of sight:

Age: There are no limitations.

Citizenship: The applicant must be a citizen or have applied for citizenship.

Residence: The applicant must have resided in Iowa during five of the last nine years, or have become blind while residing in the state. For a child under five years of age, eligibility depends upon

the residence status of the relative with whom he is living.

Degree of Blindness: There are no limitations. Cross-eyedness is a borderline entity, and though the Department is not sure of being able to accept requests for help in remedying it, doctors are urged to report such cases.

Income: What is usually regarded as medical indigency qualifies patients in this particular.

Physicians who wish, themselves, to administer eye care under the state program must ask that their names be added to the approved list at the offices of the State Department of Social Welfare. But *all doctors* are asked to help the Department in finding medically indigent patients whose eye disabilities are remediable.

An application for remedial eye care at state expense can originate either with a social worker or with a doctor, but in any case it must be channeled through the local welfare department and must include an Eye Examination Report from a physician whose name is on the approved list. When the Department's consulting ophthalmologist has approved the application, the remedial work will be authorized, and it may be performed either by an approved private practitioner or by physicians at University Hospitals. The Department makes direct payments to private physicians both for the diagnostic examination and for treatment. When care must be administered over a considerable period of time, the physician is required to make a Progress Report after initial therapy, and to request a second authorization *before* undertaking subsequent procedures. Fees for eye examinations and for cataract removal are established by the State Department, and fees for other procedures are based upon the rates that have been established for the care of indigents in the county where the service is performed. The consulting ophthalmologist passes upon claims for fees in excess of the established ones.

When people fully understand the steps that can be taken to protect sight, blindness will no longer be a major health problem. But in order that the public may become aware of the steps that can be taken, doctors must help at the local level.

TRANQUILIZERS

The pharmacologists' tranquilizers are much more potent weapons than are the physicists' atom smashers. The physicists are offering (at perhaps a terrible price) more of what we already have—gadgets, power, bombs. The new drugs are said to provide us something that human beings have never had before. "If we want joy, peace and loving kindness, they will give us loving kindness, peace, and joy. If we want beauty, they will transfigure the outside world for us and open the door to visions of unimaginable richness and significance."[1] They can remove struggle and conflict and self-control. Whether their effects will be good or bad for civilization, no one knows. The fact is that the tranquilizers are here by the confusing dozens, and more are on the way. It behooves us as doctors to learn all we can about the pills we "dish out" at the behest of patient or salesman.

To date, there are four general types of chemical compounds which act as tranquilizers. First, of the phenothiazine derivatives, Thorazine, Sparine, Pacatal, Compazine and Phenergan are perhaps the most important to date. Second, are reserpine and the related alkaloids. Third are the diphenylmethan derivatives Frenquel, Suavitil, Atarax, Transetine, Bonamine and Perazil. Finally, there are the substituted propanediols. Meprobamate (Equinil and Miltown) mephenesis (Tolserol and Mephate) and Glyketal belong to this group.[2]

The actions of these drugs have been tested on experimental animals, and to a lesser extent on human beings. Their broad actions fall into two categories. There are the "autonomic suppressants" and the "central relaxants." The autonomic suppressants consist of the phenothiazines, reserpine and the diphenylmethanes. They are antagonistic to acetylcholine, histamine and serotonin. They produce a sleep pattern in the electroencephalogram without necessarily producing sleep. They block avoidance and conditioned reflexes by somehow interfering with memory, learning and performance. They lower the convulsive threshold. They may produce apathy, depression and loss of initiative. They should be used, therefore, in hyperkinetic and anxiety states, and should not be used in depression.

The central relaxants do not affect the autonomic functions. Sleep patterns of the electroencephalogram are not noted after ordinary doses. Hostility is reduced, and muscular tension is abated without concomitant loss of interest in environment. Anxiety may therefore be lessened. These drugs may act on the thalamus or hypothalamus. They do not aggravate depression.

We are therefore entering a stage in which we must more carefully analyze the fundamentals of psychoses and psychoneuroses in order to determine which drug will be effective. As time goes on, drugs may become more and more definitive, some against phobias, some against hallucinations, some against depression, and some against anxiety. Whether it will be a good thing to remove depression by drug, rather than by having the individual face up to his problem remains to be seen. It may be that the race will disintegrate because of these drugs, or it may be that the world will become a Utopia. The fact is, nevertheless, that these drugs are here to stay. They will become more and more plentiful, and more and more diversified. It's up to us to learn about them.

1. Huxley, A.: History of tension. Ann. New York Acad. Sci., **67**:675-684, (May) 1957.
2. Berger, F. M.: Chemistry and mode of action of tranquilizing drugs. Ann. New York Acad. Sci., **67**:685-700, (May) 1957.

AMA URGES USE OF TB VACCINE

In spite of the dramatic drop in deaths from tuberculosis in recent years, the disease continues to be a major health problem in many areas.

An article and an editorial in the June 29 JAMA advised wider use of BCG vaccine, a prophylactic developed by the French scientists Calmett and Guerin 30 years ago. Given to healthy persons, it causes the body to develop an immunity to tuberculosis. Vaccination must be repeated every four years.

Some 150,000,000 persons have been vaccinated with BCG throughout the world, and in many countries it is mandatory. Extensive studies have showed a "marked reduction" in the incidence of the disease in vaccinated persons as compared with non-vaccinated ones.

It has not been used extensively in the United States, even though the American Trudeau Society has recommended that it be used for those individuals who will unavoidably be exposed to tuberculosis, for groups considered to have inferior resistance and for those living in communities with unusually high tuberculosis mortality rates. These recommendations have been supported by the National Tuberculosis Association, U.S.P.H.S. and the AMA Council on Drugs.

The number of newly reported cases of tuberculosis remains high, in spite of drops in the death rate. In fact, there were as many (1,000,000) newly reported cases in 1954 as in 1930. The number of districts in large cities where the incidence of newly reported cases is four or more times the national average shows that the disease is still a serious problem, and that an effective vaccine would be of material aid in controlling the disease in those areas. In a group of 56,000 English school children to whom the vaccine was given, the rate of infection was 82 per cent less than might normally have been expected.

In conclusion, the article said that even though such a program might have a favorable influence on the incidence in certain areas, it should not be considered as a substitute for the usual tuberculosis control methods. BCG vaccination should be thought of only as a potentially useful adjunct.

PHYSICIANS ASKED TO REPORT WORK POTENTIAL OF CONGESTIVE HEART PATIENTS

Employment horizons for cardiacs with congestive failure are beginning to widen, as a result of refinements in diagnostic procedures and important improvements in drug therapy such as the recently introduced oral organomercurial diuretics. So that physicians can have a sound basis for making recommendations as regards the work in which such individuals may safely engage, Drs. Leonard J. Goldwater, of the Columbia University School of Public Health and Administrative Medicine, and John M. Evans, of the George Washington University Hospital, have asked doctors to report their patients' performance.*

Thus far, they said, somewhat limited study indicates that no adverse effects occur when persons with heart disease are intelligently placed at work and remain under competent medical supervision. The authors reported a few illustrative case histories of people who have carried on active occupational lives despite congestive failure. One is a mechanic at an airport, "frequently working overtime with no difficulty." Another is a social worker who does considerable traveling. Therapy in these and other cases, they said, includes the oral organomercurial Neohydrin (chlormerodrin, Lakeside), low-salt diet and digitalis.

LETTER TO THE EDITOR

Sir:

Last March, after the State Department of Health had said it could not tell us the incidence of multiple sclerosis in Iowa, a private survey was begun here in Marathon through personal correspondence with M.S. patients and through some of the federated women's clubs. Many of the patients were able to give the names and addresses of others similarly afflicted. At present, the list has grown to 345.

This work has been done largely by Mrs. N. Q. Olney, whose lovely, talented daughter had recently been stricken with the disease and whose sympathy extends to all homes which this dread disease has entered. Mrs. Olney is being assisted by the Tuesday Study Club of Marathon, of which she is a member.

With information obtained from the National Multiple Sclerosis Society, this Club is promoting a "Campaign of Education" regarding the known facts concerning the disease in the hope that when the general public becomes aware of the needs of the patients and their lack of care, some action will be taken to relieve the situation.

Through correspondence with officials in the State Department of Health and the State University of Iowa, it has become evident to us that the disease has been thought far less prevalent than our survey indicates that it actually is. Care and treatment must come from the medical profession throughout the state.

How should the support and cooperation of doctors be enlisted? Has the problem been approached from the right angle? What is the next step? Your advice and counsel will be appreciated.

Respectfully,
Mrs. J. Delahunt
Chairman, Campaign Committee
Tuesday Study Club
Marathon, Iowa

* Goldwater, L. J., and Evans, J. M.: Occupational potentialities with congestive heart failure. Indust. Med. & Surg., 26:182-184, (Apr.) 1957.

DOCTOR

We Need Your Opinion

For the purpose of continuous improvement of your STATE MEDICAL JOURNAL—in reading content—original articles, editorials, news, economics and other subjects pertaining to statewide and national affairs, it is urgently requested that you spare a few moments to fill in and return this questionnaire.

Please note that this issue of your JOURNAL is an extraordinary one, for instead of five or six scientific articles, it contains 15. In the next and succeeding issues we plan to resume publishing a relatively more modest number of papers.

YOUR RESPONSE TO QUESTIONS BELOW WILL BE MOST HELPFUL.

	MORE	LESS
Indicate your choice on scientific papers		
News items		
Business (Taxes, Investments, legal info.)		
Personals		

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.....

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Indicate your favorite department or feature

.....

Do you read your STATE MEDICAL JOURNAL?

Every month Frequently Occasionally

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Name medical journals you read in order of interest. Indicate position you would give your STATE MEDICAL JOURNAL:

1. 4.
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3. 6.

PLEASE RETURN THIS PAGE TO

The Journal of the Iowa State Medical Society
529 Thirty-Sixth Street
Des Moines 12, Iowa

IN MEMORIAM

Ernest M. Kersten, M.D.



On April 2, 1957, the Iowa State Medical Society lost a worthy member, Dr. E. M. Kersten, of Fort Dodge, another of a long list of physicians of whom the doctors of Iowa, and indeed society in general, may be proud.

Dr. Kersten had spent 40 years in the practice of medicine in Iowa. He graduated from Marquette University in 1914, and practiced in Wisconsin for two years. He then came to Fort Dodge and practiced there continuously, except for an interruption for Army service during the first World War. He practiced as a junior partner, as a solo physician and as a member of a group organized in the early 1920's. When it had disintegrated, he continued to practice alone or with a single partner until 1952, when the Kersten Clinic was organized.

One of the fascinating things about Dr. Kersten and many of his contemporaries was their alertness to medical progress and their willingness to remain students. He, and men like him, continued to grow as Medicine grew. To do so, despite the long hours that his practice required him to spend in his office and in operating rooms, demanded dedication and zeal far beyond the ordinary.

Dr. Kersten was a physician. A man of great faith, he was able to inspire great faith in those whom he served. He held the best interests of his patients always uppermost, and was driven by a sense of responsibility for using his unusual energy for their benefit. Furthermore, he had the courage to decide what was best for the patient, and then to live by that decision. This quality was best demonstrated during the last weeks of his life. Having measured the risks and having arrived at the most logical therapy for the patient (himself), he had the courage to accept the mode of treatment that was indicated, though that treatment, to most of us, is frightening.

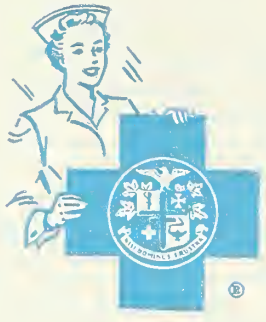
Dr. Kersten carried on a large general practice, as well as a large surgical one. He understood the need for and championed the cause of the family practitioner, yet he saw equally well the need for intensive specialty training, if the best interests of patients are adequately to be served. In his mind, there was no conflict between those attitudes.

As Dr. Kersten had a sense of responsibility toward his patients, so did he have a great feeling of responsibility for them as a group and for organized Medicine as well. He encouraged medical society participation not only at the county level but also at the state and national ones. He said many times that there is room in the State Medical Society offices for all doctors who wish to work. Those who felt that the State Society was being run by an inner coterie, he thought, were either irresponsible or indifferent, and he undertook to prove what could be accomplished by men who are willing to work. Elected a councilor from the Fifth District, he worked hard and participated in several noteworthy Society accomplishments. He was one of the first physicians to serve on the State Society's Grievance Committee. His leadership ability was quickly recognized, and his enthusiastic efforts brought him election to the Board of Trustees in 1954.

In all of his State Society activities, this clear-thinking man always had the courage to "stand up and be counted" on controversial matters. He was not an indiscriminate supporter of modern social trends, and was not interested in any compromise. It was his conviction that physicians should not move an inch in fear, but always should continue to work for that which they think right.

Probably no one is less able to see romance in the practice of Medicine than are the members of the Kersten family. Dr. Kersten himself was one of three physician sons of a physician father, and he must have entered the profession possessed of a complete familiarity with the ways in which it interferes with the maintenance of a normal family life. Yet Dr. Kersten and the three sons that he, in turn, gave to the profession have found satisfactions in the practice of Medicine that far outweigh the personal inconveniences thereof. When Dr. Kersten's three sons had been well trained in their respective specialties, they returned to practice with their father, thus indicating that their father-son relationship was a good one.

—*J. J. Weyer*, M.D.



Blue Cross
Blue Shield



The Doctor—A Salesman

Yes, every day the doctor must sell himself to his patient. He treats a condition, but at the same time he must establish a relationship of confidence between the patient and himself. Whether the physician realizes it or not, his return business is largely due to the original creation of the proper doctor-patient relationship. In other words, it is largely the result of salesmanship.

People in a community look to their physician as a counselor on things other than medical. Many times they ask him about economic matters, insurance coverage, etc. And frequently they tell their neighbors and friends what their doctor has said on these matters.

Organized medicine sponsored Blue Cross and Blue Shield to assist the patient in avoiding financial crisis at times when medical and hospital care is required. Blue Shield is Medicine's voice in the voluntary prepayment health field. Organized medicine can do a tremendous public service through salesmanship.

Every physician can and should be a salesman for the Blue Shield and Blue Cross Plans that he sponsors. The necessity will be even more evident in the future, when more comprehensive medical coverages are offered to the public. Think of the good will that can be generated through the promotion of the "Blue Chip" no-fee-schedule contract offering of Blue Shield! But if it is to be successful, the individual physician must support it through salesmanship. The plan can work to the mutual benefit of the public and the profession, but it will require the united effort of doctors at the county medical society level.

Without the cooperation and support of physicians, Blue Shield will be unable effectively to reach the market with this more expensive "community" health insurance plan. But with physician salesmanship, the public will soon learn that high quality medical care constitutes the best possible investment in good health.

THE JOURNAL *Book Shelf*



BOOKS RECEIVED

PRACTITIONERS' CONFERENCES HELD AT THE NEW YORK HOSPITAL—CORNELL MEDICAL CENTER, Volume 6, ed. by *Claude E. Forkner*, M.D. (New York City, Appleton-Century-Crofts, 1957. $6.75).

THE SPECIALTIES IN GENERAL PRACTICE, SECOND EDITION, ed. by *Russell L. Cecil*, M.D., and *Howard F. Conn*, M.D. (Philadelphia, W. B. Saunders Company, 1957. $16.00).

A MANUAL OF PHARMACOLOGY, EIGHTH EDITION, by *Torald Sollmann*, M.D. (Philadelphia, W. B. Saunders Company, 1957. $20.00).

CLINICAL PROCTOLOGY, SECOND EDITION, by *J. Peerman Nesselrod*, M.D. (Philadelphia, W. B. Saunders Company, 1957. $7.00).

BRONCHOPULMONARY DISEASES: BASIC ASPECTS, DIAGNOSIS AND TREATMENT, ed. by *Emil A. Naclerio*, M.D. (New York City, Hoeber-Harper, 1957. $24.00).

OBESITY: ITS CAUSE, CLASSIFICATION AND CARE, by *E. Philip Gelvin*, M.D., and *Thomas H. McGavak*, M.D. (New York City, Hoeber-Harper, 1957. $3.50).

ORTHOPEDIC SURGERY IN THE MEDITERRANEAN THEATRE OF OPERATIONS, ed. by *John Boyd Coates, Jr.*, M.D., *Elizabeth M. McFetridge*, M.A., and *Oscar P. Hampton, Jr.*, M.D. (Washington, Office of the Surgeon General, 1957).

FUNDAMENTALS OF GENERAL SURGERY, by *John Armes Gius*, M.D. (Chicago, The Year Book Publishers, Inc., 1957. $12.50).

YEAR BOOK OF ENDOCRINOLOGY, ed. by *Gilbert S. Gordan*, M.D., Ph.D. (Chicago, The Year Book Publishers, Inc., 1957. $6.75).

BOOK REVIEWS

GOEPP'S MEDICAL STATE BOARD QUESTIONS AND ANSWERS, NINTH EDITION, ed. by *Harrison F. Flippin*, M.D. (Philadelphia, W. B. Saunders Company, 1957. $8.00).

The ninth edition of this book presents in synopsis form the medical information that will assist the medical graduate in preparing for the state board examinations. The current edition includes the medical advances made in the last seven years, and most of the material that it contains has consequently been revised.

During the past 50 years countless students have been aided by the earlier editions of this book. This new version will not only help candidates for licensure but also will provide practicing physicians a concise review of almost any medical subject.—*Everett M. George*, M.D.

RYPINS' MEDICAL LICENSURE EXAMINATIONS, EIGHTH EDITION, ed. by *Walter L. Bierring*, M.D. (Philadelphia, W. B. Lippincott, 1957. $10.00).

This is the eighth edition of a volume devised for students preparing for the examinations conducted by the National Board of Medical Examiners. Separate summaries of each subject in the basic medical and clinical sciences are presented, together with actual questions that have been asked. The multiple-choice form of written test is thoroughly explained.

The medical student will find this volume, edited under the direction of Dr. Walter L. Bierring, a gold mine of helpful information for them to use in preparing for written examinations.—*Everett M. George*, M.D.

YEAR BOOK OF ORTHOPEDICS AND TRAUMATIC SURGERY, ed. by *Edward L. Compere*, M.D. (Chicago, The Year Book Publishers, Inc., 1957. $6.75).

Dr. Compere has again summarized the advances of the past year in orthopedic surgery and allied specialties. As usual, excellent illustrations accompany the text. In the presentation of the advances of the past year, basic orthopedic principles have been reiterated.

All physicians, especially surgeons interested in orthopedic and traumatic lesions, will wish to add this volume to their libraries.—*Everett M. George*, M.D.

MODERN THERAPY IN NEUROLOGY, ed. by *Francis M. Forster*, M.D. (St. Louis, C. V. Mosby Company, 1957. $12.00).

This text is a valuable contribution to an important segment of the field of neurology. In the past, neurology consisted of three parts: neuro-anatomy, neurophysiology and neuro-pathology. Now a new division, neuro-chemistry, has been added.

Forster has surrounded himself with 20 authorities in this field, authors who have written in a concise but thorough manner and have covered the various phases of present diseases of the nervous system. They have briefly but adequately depicted the diagnosis and treatment of each disease entity, stressing therapy.

The book is up-to-date and should serve as a splendid reference not only for the neurosurgeon and neurologist, but for the general practitioner as well.—*Walter D. Abbott*, M.D.

THE CHANGING PATIENT-DOCTOR RELATIONSHIP, by *Martin G. Vorhaus*, M.D. (New York City, Horizon Press, Inc., 1957. $3.95).

Here is something new in medical literature—a book that crystallizes many of the scattered thoughts we have in our daily approach to patients. It could well serve as a text for a short course during the senior year in medical school or during the internship year.

A physician fresh out of medical training has too little knowledge of how to achieve rapport with patients. He is expected to stub his toe in the school of experience, learning as he goes along. In Dr. Vorhaus's writings he is given a glimpse at the way in which such relationships are managed by a master, a man

who performs in the manner of a friendly psychiatrist though he is indeed an internist.

By reading this book, a practitioner cannot fail to gain insight into the methods of psychotherapy, thus acquiring technics that he can employ as he tries to help his patients. This volume is recommended to physicians in all specialties and in every age group. Its appeal is general, and its style is most readable.—*Arthur G. Lueck*, M.D.

THE RIDDLE OF STUTTERING, by *C. S. Bluemel*, M.D. (Danville, Illinois, Interstate Publishing Company, 1957. $3.50).

Dr. C. S. Bluemel has been a practicing psychiatrist for nearly half a century. His major identification has been with the Mount Airy Sanitarium in Denver. For personal as well as professional reasons, he began at the turn of the century to occupy himself with what he calls "the riddle of stuttering," and in 1913 he published his first major work, STAMMERING AND COGNATE DEFECTS OF SPEECH. This book was particularly notable for its historical treatment of the subject, and in the final chapter of this most recent book he presents again, though briefly, the history of theory and practice regarding stuttering as far back as ancient Greece and Rome.

Influenced by his medical and psychiatric background, Dr. Bluemel presents the view that "the stammerer is poorly organized in his neuro-muscular reactions" and that "stammering is similar to other psychoneurotic disorders, such a palpitation, nervous indigestion, tremor, air hunger, dysphagia, dysphonia, etc." This view is admittedly at variance with major accumulated laboratory and clinical research findings.

Dr. Bluemel's approach to therapy is basically through "ear training . . . employed to establish a good mental pattern of speech. Attention is then directed to the thinking process in speech, which is more important in therapy than the talking process." He says that "talking is thinking out loud."

After a long professional career, Dr. Bluemel remains moderately hopeful: "It is unlikely that the 'confirmed' stammerer will become distinguished as a fluent speaker; yet he can acquire useful and gratifying fluency by reorganizing his basic speech."—*Wendell Johnson*, Ph.D.

NEW ANTI-DIABETES DRUG

Dr. Leo Krall, of Boston, reported at the annual meeting of the American Diabetes Association in New York City on June 2 that DBI, a new experimental compound, had significantly lowered the blood sugar in 86 per cent of 104 diabetic patients. Unlike other oral blood-sugar-lowering drugs, it is a formamidylinourea and is not related to the sulfonamides.

Patients studied at the Joslin Clinic and at New England Deaconess Hospital included all age groups even juveniles. Sixty of the test group, he said, are still taking DBI, and only six of them require supplemental insulin.

Although the new drug shows promise, he emphasized that it is still experimental and cannot yet be released for general use by the profession.

TOBACCO AND LUNG CANCER

Although in mid-July Surgeon-general Leroy Burney announced that the American Cancer Society had convinced him as regards the alleged cause-effect relationship between cigarette smoking and lung cancer, there are a number of authorities who persist in thinking that the Cancer Society's contention is no more reasonable than is the theory that hospital wards and ordinary bed rooms must be extremely dangerous places, since a vast majority of deaths occur there.

Dr. Joseph Berkson, head of the Section of Biometry and Medical Statistics of the Mayo Clinic, told an interviewer from a national magazine, "It is my personal opinion, and I know as much about it as anyone else, that smoking does not cause cancer of the lung." Dr. Harry S. N. Greene, chairman of the Department of Pathology at Yale, says, "The mere fact of a concident increase or decrease in the frequency of given happenings does not necessarily mean that one is causally related to the other."

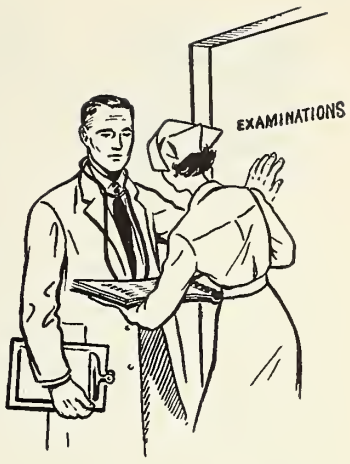
Dr. Clarence Cook Little, chairman of the Scientific Advisory Board of the Tobacco Industry Research Committee, pointed out: "Non-smokers get lung cancer. The vast majority of heavy smokers never get lung cancer. Obviously, there is no simple cause and effect mechanism reulting from cigarette smoking.

"Per capita consumption of tobacco," Dr. Little continued, "is much less in England than in the United States while lung cancer incidence is much greater. Similarly cities of the same size in the United States where no local difference in tobacco use is known do have very different rates of lung cancer incidence.

". . . According to four independent investigations on the probability of lung cancer, the vast majority of even excessive smokers are free from lung cancer. Why does a small minority develop it while the great majority does not? What type of person—physiologically, psychologically and emotionally—is a bad cancer and other health risk?"

Moreover, he pointed out, through its so-called Hammond-Horn study, the American Cancer Society claimed a "positive association" between "excessive" smoking and death from cancer of the lung, larynx, pharynx, esophagus, tongue, mouth, lip, bladder, prostate, stomach, pancreas, liver and gallbladder, from Hodgkin's disease, lymphosarcoma, retinosarcoma and cancer of the kidney, from pneumonia, influenza and other pulmonary diseases, and from aortic aneurism, duodenal ulcer, cirrhosis of the liver, asthma, coronary disease, myocarditis, cerebrovascular disease, hypertensive heart, nephritis, pulmonary tuberculosis and arteriosclerosis. "In fact," he declared, "the only diseases listed with which no positive association was observed were cancer of the colon, rectum and brain, leukemia, chronic rheumatic heart disease and diabetes."

THE DOCTOR'S BUSINESS



Permanent Life Insurance vs. Term Insurance

HOWARD D. BAKER
WATERLOO

There has been a considerable amount of discussion recently regarding the relative advantages of whole-life insurance and term insurance. For several years, we have recommended term insurance for temporary, short-term needs, and ordinary or whole-life insurance for permanent needs. Our reason has been that if one lives to retirement age, ordinary or whole-life insurance will have had a lower net cost. In making such a comparison of costs, we must assume survival to retirement age. If death were to occur earlier, term insurance would have been less expensive.

Our objective has been to advise the purchase of the amount and type of insurance that will provide the insured with an adequate amount of protection for his family in case he dies prematurely, and will provide him the largest possible return for his premiums in case he lives to retirement age.

To illustrate the comparative net costs of term insurance and ordinary or whole-life insurance, we have drawn up a tabulation of costs for a prospective life-insurance purchaser aged 35. The left-hand column shows what he would have to pay for $10,000 of 10-year-renewable term insurance to age 65, and since he will need to pay out less in premiums each year for term than for whole-life insurance, we have computed his earnings on the premium difference at the rate of 3 per cent per year, on the assumption that he would invest the difference to realize that yield. The term contract shown here is a 10-year-renewable term policy, on which there is an increase in premium at the start of each renewal period.

	$10,000 Term Insurance to Age 65	*$10,000 Ord. Life to Age 65*
Premium Outlay (30 yrs.)	$6,903	$8,450
Accumulated Dividends at Age 65		2,614
Cost of Insurance	6,903	5,836
Cash Value at Age 65		5,658
Cost of Insurance	$6,903	$ 178
Funds Available From Investing Premium Difference to Earn 3%	2,010	
Net Cost to Age 65	$4,893	$ 178

In making this comparison, we have taken the present estimated figures of one of the low-cost insurance companies. The difference amounts to $4,715 in favor of whole-life insurance.

If one were to carry a $50,000 life insurance program over a period of 30 years, his savings would be $23,575. Thus, there is a dramatic cost advantage in buying ordinary or whole-life insurance for the "long haul."

For this reason, we recommend conversions from term to ordinary life as early as possible, since each year of delay represents a definite dollar loss.

DECREASING-TERM RIDERS

We feel that term insurance can be used to definite advantage only for needs that will exist a relatively short period of time. For example, the low unit cost of term insurance can enable a man to carry the large amount of insurance that his family situation requires, even though his income doesn't yet permit his paying premiums on whole-life policies for so large an amount.

When one is starting an insurance program, the ideal combination consists of an ordinary-life policy with decreasing-term riders designed to provide for family income and mortgage redemption in the event of the insured's untimely death. These riders fill the need for temporary or decreasing amounts of insurance at the very lowest possible cost. To utilize these riders, it is necessary for one to purchase permanent type policies, however, such as ordinary or whole-life.

There are many insurance companies and myriads of types of policies. Consequently, one should study the offerings carefully before buying. Savings amounting to thousands of dollars can be effected over a lifetime, if one properly organizes his insurance program.

Iowa Academy of General Practice

NINTH ANNUAL MEETING AND SCIENTIFIC PROGRAM

Once again it is the privilege of the Iowa Chapter of the American Academy of General Practice to invite both non-member and member physicians to a two-day symposium on subjects of vital interest, especially to general practitioners. The meeting will be held on September 22, 23 and 24 at the Savery Hotel, in Des Moines. Mark your calendar now. Make your reservations and plan to attend. There will be scientific and technical exhibits on display.

In order that more members may participate, the annual business meeting will be held at 3:00 p.m. on Sunday, September 22, at the Savery, thus allowing members to arrive in Des Moines on Sunday, attend the business meeting, relax for the evening and be ready for the beginning of the scientific sessions on Monday morning. This is a change from the pattern followed in previous years.

The wives of physicians who attend the meeting are invited to a Musical Tea on Monday afternoon. A further announcement regarding this event will be included in the final Program.

The important social gathering for doctors and their wives will be the Annual Banquet, which will be preceded by a cocktail hour and followed by dancing, on Monday evening. This form of social gathering was thoroughly enjoyed last year by all those who attended it, and we anticipate even more enthusiasm this year.

All member and non-member physicians are urged to attend the scientific sessions, which will begin at 8:30 each morning, Monday and Tuesday. Following is the tentative schedule.

MONDAY MORNING

"The Relationship of the GP to Industry"—Charles F. Shook, M.D., Toledo, Ohio

"The Postphlebitic Syndrome"—G. de Takats, M.D., Chicago, Illinois

"Recent Advances in the Etiology of Mild Respiratory Diseases"—Thomas G. Ward, M.D., Notre Dame University

"Initial Management of the Seriously Injured Patient"—Claude R. Hitchcock, M.D., University of Minnesota

MONDAY LUNCHEON

"Problems Related to Medicine and Religion"—Rev. Granger Westberg, Chicago, Illinois

MONDAY AFTERNOON

"Recent Advances in the Treatment of Mild Respiratory Diseases"—Dr. Ward

"Diagnosis and Management of Acute Vascular Occlusions"—Dr. de Takats

"Diagnosis of Acute Internal Injuries"—Daniel J. Moos, M.D., University of Minnesota

Question and Answer Period

MONDAY EVENING

Cocktail Hour, Banquet, Dancing

TUESDAY MORNING

"Surgical Treatment of Varicose Veins and Stasis Ulcers"—Karl Lofgren, M.D., Mayo Clinic

"Evaluation of Heart Murmurs in Children"—E. Gray Dimond, M.D., University of Kansas

"Diagnosis and Treatment of Anemia"—Willis G. Fowler, M.D., State University of Iowa

"Local Anesthesia Produced by Drugs and Other Means"—John S. Lundy, M.D., Mayo Clinic

TUESDAY LUNCHEON

"Wills, Taxes and Money"—Walter L. Stewart, attorney at law, Des Moines

TUESDAY AFTERNOON

THE E. E. SHAW MEMORIAL LECTURE: "Forceps Delivery"—W. C. Keettel, M.D., State University of Iowa

Question and Answer Period

PANEL DISCUSSION: "Obstetric Problems"—Dr. Keettel, moderator

"Varicose Veins in Pregnancy"—Dr. Lofgren

"Heart Disease in Pregnancy"—Dr. Dimond

"Anemias in Pregnancy"—Dr. Fowler

"Anesthesia at Delivery"—Dr. Lundy

Woman's Auxiliary News

OUR PRESIDENT SAYS—

For a good many years, memories of the thirty-fourth Annual Convention of the Woman's Auxiliary to the AMA will remain with those of us who attended it. The meeting, held at Hotel Roosevelt in New York June 3-7, can be considered a success in every way. How I wish each member of the Iowa Auxiliary could have been present to receive in person the inspiring messages that were so abundant!

The first social event was the Tea and Fashion Show at the Tavern-on-the-Green on Monday afternoon. It provided a wonderful opportunity for the delegates to become better acquainted with one another, and it advanced the feeling of fellowship and mutual aims that permeated the entire convention.

Mrs. Paul C. Craig, our new president, is a charming and capable woman. We are confident that our national organization will grow in strength and wisdom under her direction. Her theme for the year is "Health Is a Joint Endeavor!" Mrs. Craig expressed the hope that "members of the Woman's Auxiliary will extend homemaking in matters of health into community life, just as they practice it for their families." We in Iowa will certainly do our best to promote this idea.

At Tuesday's luncheon, Dr. Howard Rusk, chairman of the Department of Physical Medicine and Rehabilitation at New York University's Bellevue Medical Center, gave a provocative address on "Sick People in a Troubled World." He reminded us that the problem of physical disability will increase, and that it is up to us, the more fortunate, to help our impaired fellow citizens to live useful, happy lives. Dr. Dwight Murray, immediate past-president of the AMA, was guest speaker at the luncheon on Wednesday. He spoke highly of the "fitness, abilities and health" of the youth of today. "After seeing young people in action," he said, "I certainly have no fears about physical and mental fitness of the vast majority of our youth." In the face of the rising concern over juvenile delinquency in this country, Dr. Murray's message was most encouraging.

There were interesting roundtable discussions on legislation, public relations, program, organization, TODAY'S HEALTH, the American Medical Education Foundation, publications, newsletters, BULLETIN circulation, safety, mental health, civil defense and recruitment, besides other subjects that are pertinent to our interests. Reports from the state presidents will be published in the BULLETIN, and I urge you to read them. They will be a wonderful source of material for your programs. If you do not subscribe to the BULLETIN, you may do so by sending just one dollar to your state BULLETIN chairman, Mrs. L. F. Catterson, 1002 C Avenue, Oskaloosa.

You will be interested to know that Mrs. Dean King presented an excellent report on legislation in Iowa, and that she was highly commended for it.

At the Post-Convention Workshop, Dr. Ernest B. Howard, assistant secretary of the AMA, reported on the aims and activities of national Medicine.

These brief comments are highly inadequate to inform you about all that took place at the National Convention, especially at the Workshop held on Friday morning. Thus I ask that you watch for the review of the reports and addresses that is to appear in the BULLETIN. You will enjoy reading every word of it, and it will be important to you. The Auxiliary's work can succeed only through the interest and support of each one of you!

SUE GERKEN
President

SHELBY

The Woman's Auxiliary to the Shelby County Medical Society has eight active members, and holds its meetings on the second Tuesday of each month. It organized and sponsors the Future Nurses Club of Shelby County, and puts on teas, coke parties, luncheons and pinning ceremonies for the members, in addition to paying the girls' expenses on visits to the hospitals of Des Moines and Omaha.

The Shelby Auxiliary has sponsored the annual Christmas party for the employees of the local hospital and their husbands in December of each of the last three years, and it has won honorable mention from the National Auxiliary for its sale of TODAY'S HEALTH subscriptions.

Last fall and early last winter, the Auxiliary cataloged the books in the doctors' new library at the county hospital. Its new project is that of assisting in the organization of home nursing courses that are being sponsored by the Shelby County Civil Defense Committee.

IN MEMORIAM

The members of the Auxiliary were greatly saddened to learn of the death, a few weeks ago, of Mrs. Gerald Caughlan, of Council Bluffs.

PRACTICAL NURSING IN IOWA

As a representative of the Woman's Auxiliary to the Iowa State Medical Society, and of the Iowa Nursing Careers Committee, Mrs. Charles H. Flynn attended a meeting of the State advisory Committee to the Vocational Education Division of the State Department of Public Instruction, held at the State Office Building on May 16. The purpose of the gathering was to discuss and evaluate the Practical Nursing Program of the State of Iowa.

Miss Elizabeth Kerr reviewed the history of practical nursing in Iowa, and spoke of the present trend in that field. She said the practical nurses' licensing law went into effect in 1949. Forty-seven states and three territories now have licensing acts for practical nurses, and the forty-eighth state, West Virginia, is in the process of passing such legislation. Miss Kerr brought out the reasons for the shortage of nurses in the United States, and said that 70,000 more R.N.'s are needed to fill positions now open to them in this country. She listed the requirements for admission to schools of practical nursing.

During the discussions that followed, Miss Sage stated that 100 practical nurses are being graduated each year in Iowa. It was decided that the public needs to be disabused of the idea that practical nurses are no more than glorified nurses' aides. And it was agreed that not only the general public but even the registered nurses, the hospital administrators and the doctors in this state need that reeducation as regards the functions and status of practical nurses.

It was agreed that non-nursing organizations that are represented on the State Advisory Committee can help the Vocational Education Division in the areas of recruitment and publicity and in the offering of scholarships for students of practical nursing. Mr. Beatty stated that the outcomes of the meeting should be (1) that members of the Committee who were present would inform those who were absent, as well as the members of their respective organizations, about what had been decided at the meeting and about the jobs that practical nurses can be expected to perform; and (2) that the Committee would inform the public in general, as well as professional people, regarding the purposes and scope of the practical nursing program.

It was also agreed that publicity will be most effective on the local level. In the discussion of technics, brochures, a sub-committee for public relations, and a speakers' bureau were proposed. Future meetings of the Committee will be held at the request of the Division of Vocational Rehabilitation.

NEWS NOTES

Those members of the Board of Directors of the Woman's Auxiliary who were unable to attend the meeting on July 10 missed a surprise birthday "party." A decorated birthday cake for the president, Sue Gerken, graced the luncheon table at Bucknam's, and it was a beauty as well as delicious. How fortunate it was that "a little bird" arrived just in the nick of time with the information that July 11 was Sue's birthday.

Mrs. Flynn attended a briefing session of the Woman's Auxiliary to the American Medical Association at the Drake Hotel, in Chicago, on June 26, 27 and 28.

On August 27 at the Iowa State Fair, Mrs. H. G. Ellis, of Des Moines, will be in the Adult Education booth to demonstrate the making of articles that will amuse convalescent children.

The Woman's Auxiliary to the Iowa State Medical Society was well represented at the Women's Traffic Safety Conference held at the State House in Des Moines on July 9. The purposes of the meeting was to establish a two-year "Plan of Action" in traffic safety for every women's organization in the state. Mrs. R. J. Hines, Des Moines, is a member of the governor's safety committee; Mrs. C. R. Sokel, State Center, the Auxiliary's Safety Chairman, attended the conference, and Mrs. C. H. Flynn, Clarinda, Mrs. D. H. King, Spencer, and Mrs. J. F. Gerken, Waterloo, were group discussion leaders there. Many other Auxiliary members attended as representatives of their county Auxiliaries.

AMEF Note Paper and Envelopes

$1.00 for a pack of 10 each

Order from Mrs. Robert Updegraff
630 Foster Drive
Des Moines 12, Iowa

Proceeds will be donated to the American Medical Education Fund

IOWA NURSING CAREERS COMMITTEE

The Iowa Nursing Careers Committee met at the ISMS building on July 8, with the Auxiliary's representative Mrs. C. H. Flynn acting as chairman. Dr. William M. Sproul, of Des Moines, represented the state Medical Society, and Mrs. N. W. Irving, Mrs. D. H. King and Mrs. J. F. Gerken of the Woman's Auxiliary also attended.

As you know, the INCC is made up of representatives from the various organizations in Iowa that are interested in recruitment of nursing students and in the many problems that arise in that field. Among the projects on which the Committee is working are (1) a survey and compilation of available loans and scholarships for nursing students; (2) a new brochure to contain information on all professional and practical nursing schools in Iowa; and (3) procedures for making information regarding needs in the nurse recruitment field available to students.

The Committee's new officers for 1957-1958, elected at the meeting, are: Mrs. Evelyn Davison, Clarinda (Licensed Practical Nurse Association), chairman; Miss Jessie Norelius, Kiron (Iowa Cancer Society), vice-chairman; Miss Thelma Luther, Des Moines (Education Division, State Health Department), recording secretary; and Miss Hazel Buhrman, Knoxville (Iowa League for Nursing), treasurer. The executive office remains at the Iowa State Medical Society, 529 Thirty-sixth Street, Des Moines 12, and all inquiries and requests for materials should be channeled to that address.

MEETING OF BOARD OF DIRECTORS

The Summer Board Meeting of the Woman's Auxiliary to the Iowa State Medical Society was held on July 10, and was well attended. Since there are many new members on the Board, Mr. Donald L. Taylor, executive secretary of the State Medical Society, gave a detailed review of the work that each of the State Society committees is planning. His remarks were most informative, and they were very well received. He mentioned a number of projects in which State Society committees intend to ask the support and cooperation of the Auxiliary.

Mr. Robert Throckmorton, the attorney for the Committee on Legislation, reviewed the activities regarding health legislation and brought the group up to date on the status of bills presented at the last session of the General Assembly.

The Educational Loan Fund Committee reported one application for a loan just received, and stated that it would be able to review applications and make the necessary loans before the opening of school in the fall. Thus, any member who knows of a student who needs funds is asked to get in touch with Mrs. N. W. Irving, 4916 Harwood Drive, Des Moines 12, at once.

Mrs. Harold Entz, 441 Kingbard, Waterloo, the new Recruitment Chairman, is making plans for the annual Future Nurses Club convention to be held in November. You will be hearing from her in the very near future. This is a project which requires the cooperation of all Future Nurses and their sponsors.

Mrs. Rudolph Nielsen, 919 Washington Street, Cedar Falls, is to be the new Mental Health Chairman. She is very enthusiastic about "Milestones to Marriage," the series of letters for high school seniors which was introduced as a mental health project last year by the late Mrs. L. A. Coffin. She intends reviving and extending the project this fall.

Mrs. E. A. Larsen, of Centerville, as first vice-president is the Organization Chairman, and is already making plans for activity in that field. If there is no Auxiliary in one of the counties that borders on yours, and if you are acquainted with the wife of one of the doctors there, won't you please sell her on the importance of an organized Auxiliary? Write to Mrs. Larsen for any details that may help you in convincing your prospect. The importance of a close organization in the achieving of the various goals that all doctors and doctors' wives share cannot be stressed too strongly!

The actions taken by the Board will be reported in detail in a later issue of the WOMAN'S AUXILIARY NEWS.

THE YEARBOOK

Mrs. Robert Mason, 5818 Chamberlain Drive, Des Moines 12, is anxious to have the names of county Auxiliary officers for the current year as soon as possible. She must have the names if they are to appear in the new YEARBOOK.

The Iowa Auxiliary has received many compliments from National on its YEARBOOK. Each new issue will be useful only if it is complete and accurate.

WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

President—Mrs. J. F. Gerken, Waterloo
President-Elect—Mrs. H. C. Merillat, 2800 Woodland Avenue, Des Moines 12
Secretary—Mrs. Wm. C. Shinkle, 907-49th St., Des Moines
Treasurer—Mrs. E. A. Vorisek, 6205 Woodland Rd., Des Moines 12
Editor of THE NEWS—Mrs. E. T. Burke, 601 S.W. 42nd Street, Des Moines 12
Asst. Editor of THE NEWS—Mrs. D. F. Crowley, Jr., 663 44th Street, Des Moines 12

POSTGRADUATE COURSES ON DISEASES OF THE CHEST

The Council on Postgraduate Education of the American College of Chest Physicians will present the first of its 1958 series of postgraduate courses in Chicago. The dates are October 21-25, the place, Hotel Knickerbocker and the tuition $75. The most recent advances in the diagnosis and treatment of chest diseases—medical and surgical—will be presented. Further information may be obtained from the Executive Director of the College, 120 East Chestnut Street, Chicago 11, Illinois.

INTERNATIONAL COLLEGE OF SURGEONS

The twenty-second Annual Congress of the United States and Canadian Sections International College of Surgeons, will be held at the Palmer House, Chicago, September 8-12. In addition to more than a dozen papers by foreign authorities, the general sessions will include lectures on coronary artery disease, cancer of the stomach, ulcerative colitis, gallbladder disease, endoscopy, reconstruction of the head and neck following radical surgery, and extracorporeal bypass circulation.

In addition there will be section programs on proctology, neurosurgery, ob.-gyn. procedures, opthalmology-otolaryngology, orthopedic surgery and plastic surgery. Further information can be secured from Dr. Ross T. McIntire, Executive Director, 1516 Lake Shore Drive, Chicago 10, Illinois.

MIDWEST MEETING OF AMERICAN COLLEGE OF PHYSICIANS

On October 12, 1957, the Midwest Regional Meeting of the American College of Physicians will be held in Urbana, Illinois. Twenty-two papers of 12 minutes each are to be presented, and in most instances they will concern original, experimental or clinical work.

The program will be ready for distribution on about September 1 and can be secured from Dr. Norris L. Brookens, of Urbana. Non-members of the College who are interested in internal medicine are cordially invited to attend. There will be no registration fee.

ACADEMY OF PSYCHOSOMATIC MEDICINE

The fourth annual meeting of the Academy of Psychosomatic Medicine at the Morrison Hotel, Chicago, October 17-19, 1957, will be devoted to the psychosomatic aspects of obstetrics, gynecology, endocrinology and diseases of metabolism. The meetings will be open to psychologists, social workers and nurses, as well as to physicians. There will be a number of symposia and 24 roundtable discussions designed to teach psychosomatic medicine to non-psychiatrically oriented physicians and other personnel.

Copies of the program may be secured from Dr. William S. Kroger, secretary of the Academy, 104 South Michigan Avenue, Chicago 3, Illinois.

SOCIAL SECURITY OUTGO EXCEEDS INCOME

For the first time, the sum that the U. S. government will pay out to Social Security recipients this year will exceed the amount it collects in Social Security taxes. Actually, there will be no deficit during this fiscal year, for the government's income from investing the cash currently on hand will more than make up the difference, but the balance will be a narrow one.

In explanation, Mr. Monroe W. Karmin, a staff reporter for the WALL STREET JOURNAL,* says, "The gap between outgo and current tax income upsets the calculations of federal forecasters and results from these simple facts: Collections are falling short of expectations; benefits are mounting faster than anticipated, as Congress extends coverage to new groups of workers."

It now appears that investment income will continue to prevent an overall deficit next year, but not in 1959. Then, Social Security payments will begin depleting reserves that have been accumulated. In 1960, unless Congress decides once more to postpone it, an increase in Social Security taxes will put the fund temporarily in the black.

There are three reasons for the Social Security System's getting into trouble more quickly than had been anticipated: (1) The agency anticipated $7.3 million receipts, but got only $7 million. (2) The Act was changed last year so as to admit women to benefits at age 62, rather than age 65, thus adding 850,000 to the list of recipients. (3) Farmers, who were first covered by Social Security three years ago, are applying for retirement benefits more rapidly than had been expected. Applications from that group number 350,000 so far.

The extension of Social Security benefits to totally disabled individuals over 50 years of age didn't go into effect until July of this year, and thus hadn't contributed to the situation on which Mr. Karmin reported. The agency expected to begin paying benefits to 275,000 persons in that category on August 1.

CANADA ADOPTS VERSION OF JENKINS-KEOGH

The Canadian parliament has adopted an amendment to its Income Tax Act comparable to the Jenkins-Keogh Bill, which the AMA and other organizations have been supporting in the Congress of the United States. The limit of deferment in the Canadian law is 10 per cent of earned income or $2,500 per year, whichever is the lesser. Under the Jenkins-Keogh Bill, the limit proposed is 10 per cent of earned income or $5,000.

* WALL STREET JOURNAL, July 17, pp. 1, 5.

STATE DEPARTMENT OF HEALTH

Edward G. Zimmer
COMMISSIONER

Oriental Flu at Grinnell

An outbreak of acute upper-respiratory disease clinically characteristic of influenza occurred among a group of 1,600 youngsters from 15 through 19 years of age and 200 counsellors of the Presbyterian Westminster youth group assembled at Grinnell College, in Grinnell, Iowa. The conference was scheduled for June 26 to July 3, and the delegates and counsellors were from 43 states, as well as from Alaska, Puerto Rico, Cuba, Germany, Austria and India. They were housed in the 15 college dormitories which normally accommodate 950 students. They were fed in the two college dining rooms and ate in two shifts, with about 400 to 500 eating at one time in a dining room. They used the college recreational facilities, including the indoor swimming pool.

The illness was abrupt in onset, with fever in a few cases up to 105°F., sore throat, headache, general malaise and a non-productive cough. Some of the patients complained of pains in the chest, although no pneumonitis could be detected. The illness lasted from two to three days. Achromycin in prophylactic doses was given to prevent secondary infection. Fairly severe symptoms occurred in 199 cases, but many persons had a mild illness characterized by low-grade fever and a slight sore throat.

A review of the patient register at the student infirmary showed that for a five-day period from June 26 to June 30, a total of 114 patients were cared for. Others were cared for at the two local hospitals in Grinnell. The dates of admission for the 114 persons were as follows:

June 26	1 case
June 27	5 cases
June 28	18 cases
June 29	28 cases
June 30	62 cases

Of the first 12 persons admitted to the infirmary, 11 were delegates from the State of California. One of these, a girl, had attended the California State Girls' Convention, at Davis, California, a week earlier. (Influenza has previously been reported as having occurred in that group.) This girl, arriving in Grinnell on June 26, was already ill. The twelfth among the first cases was a Nevada youngster who had traveled all the way with the California group.

On Monday, July 1, because normal facilities for the care of the ill had been exhausted and a temporary infirmatory had been set up in one of the dormitories, it was decided that the conference should be terminated and the delegates sent home on that day and the following one. All persons were screened medically before being permitted to leave Grinnell, and those who were found to be ill were required to remain behind. As of Tuesday evening, 200 youngsters and 50 counsellors remained on the campus. As of Friday, July 5, only two youngsters remained behind. No complications appeared in any of the group. Recovery was prompt and uneventful.

The State Department of Health has notified all state health departments, giving them a list of the names and addresses of all persons who attended the conference and indicating those that were ill at any time before leaving Grinnell.

Cultures for study were taken by Dr. Albert McKee, director of the WHO Regional Influenzal Laboratory at Iowa City. He obtained his cultures on Saturday, June 29. Dr. Chin, of the Kansas City Field Station of the Communicable Disease Center of U.S.P.H.S., who helped in the investigation, also obtained cultures for study in his laboratory. In addition to examining the cultures for influenza, Dr. Chin's laboratories will examine them for all types of virus that are known to cause upper respiratory-tract infection.

Dr. McKee has reported that studies of nose and throat washings taken early during the illnesses of six patients and from convalescent serum which the patients have sent him from their homes, he has isolated the Type A variant of influenza that was responsible for the Far Eastern outbreak first reported early in June.

NATIONAL POLIOMYELITIS SURVEILLANCE PROGRAM

Since the spring of 1955, all states and territories have participated in the National Poliomyelitis Surveillance Program. The objectives have been the continued surveillance of vaccine safety, the evaluation of vaccine effectiveness, and the recording of current trends in the epidemiology of poliomyelitis and polio-like diseases.

In the continuation of the program during 1957, the following procedures—incorporating only slight modifications of those used in 1956—are recommended.

SAFETY

Prompt submission of an individual case record, including the vaccine manufacturer's name and lot number, is now requested only for paralytic cases in patients vaccinated within 30 days of the onset of the disease. The State Department of Health will attempt, with the doctors' cooperation, to obtain this information on all cases, and forward it promptly to the Public Health Service, where the information will then become a part of the national study.

REACTIONS

The significance of possible neurologic, allergic and other reactions to poliomyelitis vaccine has not been fully determined. The Public Health Service will therefore continue to compile and distribute data concerning vaccine reactions. It is urged that all such reactions be reported promptly to the State Department of Health. In addition to reports of the above-mentioned reactions, the Department is also interested in any paralysis that occurs shortly after vaccination, particularly when the site of the paralysis is correlated with the site of inoculation.

EFFECTIVENESS

As in 1956, current analyses of vaccine effectiveness must be based upon continued observation on a nationwide basis of trends of age and geographic distribution, and of paralytic and vaccination status of poliomyelitis cases. Such data, compiled by 44 states, three territories and the District of Columbia in the 1956 Distribution Analysis, have revealed interesting epidemiologic trends and have suggested possible effects of vaccine on the epidemiology of poliomyelitis. Preliminary data for the 1956 Age Distribution Analysis have appeared in PSU Reports numbers 89, 94, 99, 102 and 109, and in "Surveillance of Poliomyelitis in the United States in 1956," PUBLIC HEALTH REPORTS, 72:381, (May) 1957. Further review of these data will soon be distributed as a PSU Report Supplement.

TRIPLY-VACCINATED CASES

The Public Health Service will continue to maintain a national registry on all reported triply-vaccinated poliomyelitis cases. There is extensive interest in these cases in many circles, and a central depository for verified data on them is desirable. All states and territories are cooperating in this study. The State Department of Health will work with physicians caring for triply-vaccinated cases to obtain the necessary reports and to see to it that the required specimens are submitted to laboratories for study.

SPECIAL STUDIES

The Public Health Service, as well as the states, is interested in the detection of any outbreaks of paralytic or non-paralytic diseases such as the ECHO 4 virus infection that occurred in Marshall County, Iowa, in 1955, and the coxsackie B virus infection that took place in central Iowa during 1956. The State Department of Health will continue the type of investigative work that it has been doing as regards these types of infection.

QUADRUPLE VACCINE

Canadian scientists have produced and are now testing a quadruple vaccine to protect against poliomyelitis, diphtheria, tetanus and whooping cough. The development is important, according to Dr. R. D. Defries, of Toronto, because the number of injections involved in protecting patients against all those diseases has prompted physicians to omit either the triple vaccine or the Salk injection. Dr. Defries reported on this development at the recent meeting of the CMA in Edmonton, Alberta.

MORBIDITY REPORT FOR MONTH OF JUNE

Disease	*1957 June*	*1957 May*	*1956 June*	*Most Cases Reported From These Counties*
Diphtheria	0	0	1	
Scarlet fever	55	66	42	Johnson, Polk
Typhoid fever	1	0	14	Black Hawk
Smallpox	0	0	0	
Measles	2211	2189	2236	Dubuque, Polk, Scott, Story
Whooping cough	19	30	59	Polk
Brucellosis	7	22	17	Scattered one to a county
Chickenpox	261	556	442	Des Moines, Dubuque, Linn, Polk, Scott
Meningococcus meningitis	0	1	2	
Mumps	481	549	191	Boone, Des Moines, Dubuque, Polk, Scott
Poliomyelitis	6	1	9	Buchanan, Jasper, Polk, Sac, Wayne, Woodbury
Infectious hepatitis	17	18	43	Mills, Polk, Woodbury
Rabies in animals	32	33	17	Johnson
Malaria	0	0	1	
Psittacosis	0	1	0	
Q fever	0	0	0	
Tuberculosis	38	27	75	For the State
Syphilis	150	168	96	For the State
Gonorrhea	57	55	80	For the State
Histoplasmosis	0	0	2	
Food intoxication	0	0	0	
Meningitis (type unspecified)	0	3	2	
Diphtheria carrier	0	0	0	
Aseptic meningitis	0	0	0	
Salmonellosis	4	7	1	Scattered one to a county
Blastomycosis	0	0	0	
Tetanus	0	2	0	
Chancroid	0	0	0	
Encephalitis	0	0	2	
Influenzal meningitis	0	0	4	
Amebiasis	1	1	2	Cerro Gordo
Shigellosis	0	0	0	

The "Doctor Draft" Act

WILLIAM P. SHEPARD, M.D.

NEW YORK CITY

Until the outbreak of World War II, the provision of civilian medical services was little affected by military medical services. During World War II, however, more than a third of the actively practicing physicians, and a correspondingly significant proportion of other health personnel, served tours of duty in the Armed Forces. Throughout the war period a civilian consultant group, the Procurement and Assignment Service of the War Manpower Commission, gave leadership in efforts to minimize the impact of this tremendous withdrawal of health personnel upon civilian services. Since that time, many other civilian advisory groups have worked with the military and other federal services. Both groups have recognized the advantages of working together, and a closer rapport has developed between them in the resolution of problems.

The Health Resources Advisory Committee was established in August 1950, at the suggestion of the President to advise the chairman of the National Security Resources Board regarding health resources essential to a national emergency.

In October, 1950, the President designated the chairman and members of the Health Resources Advisory Committee to serve also as the National Advisory Committee to the Selective Service System as authorized under the provisions of the "doctor-draft act," an assignment which it has held through the present.

In April, 1951, the Health Resources Advisory Committee and its supporting staff were transferred to the Office of Defense Mobilization with the responsibility of advising the director of the Office of Defense Mobilization on problems in the entire field of health resources. Its functions include policy recommendations relating to:

1. mobilization, allocation and utilization of personnel necessary for wartime health services;
2. public health and environmental sanitation services;
3. veterinary medical services;
4. utilization of health facilities;
5. provision of health equipment and supplies; and
6. maintenance of essential teaching and research in health fields.

It is not an operating group, but functions to aid in formulating policies.

The Committee has been an active group. Currently, it is meeting in two-day sessions at approximately three week intervals. Since its inception it has met approximately 120 times in Washington and elsewhere.

While we have a broad responsibility relating to health facilities and supplies, as well as to health manpower, most of our time has been spent in consideration of manpower problems and policies. Throughout our existence as the Health Resources Advisory Committee and the National Advisory Committee to the Selective Service System, our basic problem has been to achieve an equitable and practicable allocation of health manpower between the civilian and military requirements. In a situation of limited supply, we have had to give continuous attention to the especially critical areas of health service in the civilian community.

It has been a difficult assignment and could only be accomplished through the total cooperation of all interested groups, both governmental and voluntary. I should like to express our gratitude to you, the Iowa State Medical Society, its officers and its members, for the complete cooperation and assistance that you have given to us.

Since the enactment of the "doctor-draft act," the Department of Defense has looked to the Selective Service System for procurement of the required numbers of physicians and dentists. By the end of June, 1956, the Selective Service System had delivered almost 11,000 Priority I, II and III physicians to the Armed Forces. But as is true of other men who put on uniforms, the number of men who have entered service through the pressure of the "doctor-draft act" is considerably greater than the number actually called by local draft boards. As of June 30, 1956, classified physician registrants in Priorities I, II and III totalled 69,000 for the United States as a whole. Of this number, 15,700 or 23 per cent were classified 1C or 1D, the classifications which denote that the individual has served, is serving or is reserved for service in the Armed Forces. For Iowa the parallel figures were 797 classified, and 267 or 34 per cent of the men were in classes 1C or 1D.

It is interesting to note that among the states, Iowa had the highest proportion of classified physician registrants who had served, were serving or were reserved for service in the Armed Forces.

Since 1950, when the "doctor-draft act" became effective, the Health Resources Advisory Committee has conducted yearly surveys of interns

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and residents in approved programs at hospitals in the United States. The purpose of these surveys has been to show: (1) normal or existing staffing levels which could be used as "bench-marks" in mobilization planning; (2) the extent of losses due to military withdrawals under the "doctor-draft" law; and (3) the development of trends in hospital house staffing.

The following are some of the highlights of an analysis made of these surveys for the period 1950-55:

(1) Between 1950 and 1955 the total number of interns in approved programs in United States hospitals increased by 41 per cent, and the number of residents by 16 per cent. The comparable increases for Iowa were 29 per cent for interns and 13 per cent for residents.

(2) The number of interns who were U. S. citizens increased 18 per cent, and the number who were non-citizens 218 per cent. The comparable increases for Iowa were 9 per cent for citizens and 250 per cent for non-citizens.

(3) The number of residents who were citizens was essentially the same in 1955 as in 1950. The number of non-citizen residents increased more than 300 per cent during the 5 year period. The comparable figures for Iowa were a 4 per cent decrease in the number of citizen residents but a 400 per cent increase in the number of non-citizen residents.

Instead of reenacting the "doctor-draft" law that expired on June 30, 1957, the Congress amended the Universal Military Training and Service Act to provide authority for the President to issue special calls for physicians, dentists and allied specialists for duty in the Armed Forces. This legislation permits special calls for this category of personnel to be made from those persons who have been deferred for schooling and therefore have an obligation under the regular draft up to age 35.

The planned physician-troop strength ratio, applied to the expected size of the Armed Forces, indicated a total requirement of some 9,700 physicians as of July, 1957. Under this assumption, how many physician replacements from civilian life will be needed for the military services during the next three fiscal years and what are the prospects under the newly enacted legislation for meeting these needs?

By July, 1957, there were about 3,600 medical officers, regular corps, on duty in the three services. The remaining 6,100 physicians on duty were, in the main, reserve officers serving a two-year tour of duty. About 2,200 of these entered the services during fiscal year 1956 and will be replaced during fiscal year 1958. The remaining 3,900 reserve officers will come to duty sometime during fiscal year 1957 and will serve until fiscal year 1959.

From data available to us at this time, it appears that the numbers of physicians with liability for military service will be considerably in excess of requirements in each of the next three fiscal years. During fiscal year 1958, for example, it is estimated that there will be about 7,000 physicians with liability, but a requirement of only 2,200. Thus, there should be a surplus of about 4,800 physicians, many of whom will be able to continue their specialty training without interruption before being called to active duty. One of the problems of the military during the past few years has been their inability to obtain sufficient numbers of physicians with training in certain scarce, specialty categories. But with the availability of increasing numbers of physicians for specialty training prior to entrance on active duty, this problem should be greatly lessened in the next few years.

For the years beyond 1960, new graduates with liability for military service should be available at a rate of 5,000 a year. In the absence of substantial increases in either ratio or troop strength, the backlog of physicians with liability should continue to grow, since only about 6,100 reserve officer replacements will be needed in each two-year period.

Recent experience in the military medical and dental corps indicates that resignations are on the decrease, and applications for commissions in the regular corps from among those in the reserves are on the increase. This presumably is due to the Career Incentive Program which was designed by the Department of Defense to increase the attractiveness of service in the regular corps. Any increase in the regular corps complement will, of course, permit a reduction in the number of reserve officer replacements needed. According to the Department of Defense, each additional career military doctor will eliminate the need for drafting four civilian doctors every six years.

It is evident from the foregoing that there will be an excess of physicians to meet the needs of the military departments subsequent to July 1, 1957. This excess in itself will create problems. One of these concerns the equitable allocation of physicians between military and civilian service. Another is the determination of whether individual physicians are available for military service or whether their services are essential to the civilian community. The Health Resources Advisory Committee feels that there will be a continuing need for some legally-appointed body to insure an equitable allocation and make certain that those most valuable to the civilian health economy may be kept in their present positions. We believe that such an authoritative mechanism is highly important not only in the national health, safety and interest at the present time, but also in the case of a national emergency.

Alcoholism and Iowa Physicians

CARL E. WAISANEN, Ph.D., AND HAROLD A. MULFORD, Ph.D.

IOWA CITY

The realization is spreading that alcoholism is a serious public health problem in our society. Evidence of this change in attitude can be seen in the efforts that lay and professional groups are making to understand the problem and that governmental and private agencies are exerting in combatting the illness.

This paper is a report on a survey made in 1956 in an effort to discover the treatment which alcoholics receive from doctors of medicine in Iowa, and to provide a factual basis for assessing the medical resources available to alcoholics in this state.

ALCOHOLISM IN IOWA

There are approximately 44,000 alcoholics in Iowa,* and among them, males outnumber females 6.6 to 1. Approximately 11,000 are chronic alcoholics, or what have been called "alcoholics with complications." The other 33,000 include both alcohol addicts and problem drinkers, and constitute the group that have been designated "alcoholics without complications."**

There has been a sizable increase in the number of alcoholics in recent decades. Per 100,000 of population age 20 and over, the alcoholism rate in Iowa jumped from 1,880 in 1940, to 2,290 in 1953.† Thus, there apparently was an increase of 22 per cent, but in part the 1953 figure may have reflected better reporting and improved diagnosis. In any case, however, it may be taken as an index of the magnitude of the problem in the state.

In rate of alcoholism, Iowa ranks forty-fifth among the states, but though our state thus compares favorably with the vast majority of other states, there is no reason for our being complacent, for there were 17 other states in 1953 with rates between 2,000 and 2,999 alcoholics per 100,000 people age 20 and over—rates differing no more than one per cent from one another. And 12 of those states have programs in operation directed toward treatment, education and research for the eradication of alcoholism.††

Preliminary analysis of the problem in Iowa demonstrates no distinct ecologic pattern. There is, however, some indication of a lesser incidence in the southern tier of counties, and greater incidence in both the western and eastern border counties. In general, the alcoholism problem in Iowa seems to show the pattern of characteristics found in other states in which surveys have been made.

QUESTIONNAIRES SENT TO IOWA DOCTORS

In August, 1956, questionnaires were sent to 2,000 physicians in Iowa. A total of 595 questionnaires were returned.

The doctors who replied constitute a group that closely represents the distribution of physicians in Iowa by type of practice. According to the AMERICAN MEDICAL DIRECTORY,‡ the doctors of medicine in Iowa consisted of 53 per cent general practitioners and 47 per cent specialists. Ninety-three of the returned questionnaires were omitted from the analysis for various reasons. Some of the men, for example, were not currently engaged in private practice; others, we discovered, were not residents of Iowa; and in some instances the doctors' type of practice could not readily be identified. We subjected the remaining 502 returns to an intensive analysis.

NUMBER OF DOCTORS WHO TREATED ALCOHOLICS

Of the 502 physicians whose answers were in-

TABLE 1

IOWA PHYSICIANS WHO TREATED ALCOHOLIC PATIENTS, 1955

Categories	*Sample (Per Cent)*	*Projection to State (Number)*
Physicians in active practice in the state	100	2,402
Physicians who treated no patients whose diagnosis was alcoholism	51.6	1,239
Physicians who treated one or more patients whose diagnosis was alcoholism	48.4	1,163
Physicians who treated one or more patients whose primary diagnosis was alcoholism	37.7	906
Physicians who treated one or more patients whose secondary diagnosis was alcoholism	37.1	892
Physicians who treated one or more patients with primary diagnosis of alcoholism and one or more patients with secondary diagnosis of alcoholism	26.5	637

The authors are, respectively, research associate and executive director of the Committee for Research on Alcoholism of the College of Medicine and the Department of Sociology at S.U.I. This study is a part of a larger survey of the problem financed by a special appropriation of the 56th General Assembly of Iowa (1955). Responsibility for this article is entirely the authors'.

* By the Jellinek formula for estimating the number of alcoholics. See: Mulford, H., and Waisanen, C., *A survey of the alcoholism problem in Iowa*, pp. 8-12. State Univ. of Iowa, Iowa City, (Aug. 1957).

** Report No. 48, World Health Organization Technical Report Series, August, 1952.

† Keller, M., and Efron, V.: Prevalence of alcoholism. Quart. J. Stud. Alc., 16:619-644 (Dec. 1955).

†† See: PROGRAMS ON ALCOHOLISM RESEARCH, TREATMENT AND REHABILITATION IN THE UNITED STATES AND CANADA, Third Edition. License Beverage Industries, New York City, 1956.

‡ AMERICAN MEDICAL DIRECTORY, 18th Edition, 1950. See also, DISTRIBUTION OF PHYSICIANS BY MEDICAL SERVICE AREAS, American Medical Association, 1954.

tensively analyzed, 243 (48 per cent) said that during the immediately preceding 12 months they had treated one or more patients in whom the diagnosis was alcoholism. Table 1 shows percentages of replies, and on the assumption that the doctors who replied were a representative sampling, it shows the numbers of physicians in the state who can be presumed to have had each of the several sorts of experiences.

Table 1 shows that 48.4 per cent of Iowa physicians treated patients with a diagnosis of alcoholism. Surveys of doctors in nearby states have shown that the Iowa figure is low. In Kansas the comparable percentage of physicians who treated alcoholics was 70, and in Missouri it was 52.5.*

Table 1, since it includes practitioners of all sorts of specialties, includes some who might not reasonably be expected to treat alcoholics. In Table 2 we have classified physicians by type of practice and have shown the percentages who treated alcoholics of the different diagnostic categories.

TABLE 2

IOWA PHYSICIANS WHO TREATED ALCOHOLIC PATIENTS, 1955
BY TYPE OF PRACTICE AND BY DIAGNOSIS MADE

	Percentages			
	Treated one or more patients with primary diagnosis of alcoholism.	Treated one or more patients with secondary diagnosis of alcoholism.	Treated at least one patient of each diagnostic class.	Treated no alcoholics.
Types of Practitioners				
General Practitioners	60.2	53.9	44.3	30.2
Psychiatrists	57.1	85.7	57.1	14.3
Internists	60.5	50.0	36.8	26.4
Other Specialists	7.4	14.8	2.8	81.2
AVERAGES	37.7	37.1	26.5	51.6

It is clear from the above table that the great majority of alcoholics who are treated receive care from general practitioners, internists and psychiatrists. The general practitioners would, of course, treat the greatest number of alcoholics, since general practitioners comprise 55 per cent of the total number of physicians. It is of interest to point out here that although the percentages of physicians who treated only primary or only secondary alcoholics are about the same, the number of patients with a secondary diagnosis of alcoholism is almost twice the number with a primary diagnosis of alcoholism. This point will be considered below.

* ALCOHOLISM IN MISSOURI; STATEMENT OF THE PROBLEM AND RECOMMENDATIONS. Missouri Medical Assn., 1955. See also, ALCOHOLISM SURVEY STATE OF KANSAS. Comm. on Alcoholism, Topeka.

NUMBER OF ALCOHOLICS TREATED

Although the percentage of physicians who treat alcoholics may give a broad indication of the availability of medical care or of the use that alcoholics make of medical care, the number of alcoholics treated would indicate other dimensions of the alcoholism problem in Iowa.

The 502 physicians in the sample treated a total of 2,438 alcoholic patients in 1955. Thus the average number of patients per physician was slightly less than five. Of all the patients treated for alcoholism, 37.2 per cent had a primary diagnosis of alcoholism, and 62.8 per cent had a secondary diagnosis of alcoholism.

Using the ratio established in the sample, we projected the data to the entire state, and thereby arrived at the total number of patients treated in each diagnostic category. These results are given in Table 3.

TABLE 3

ALCOHOLIC PATIENTS TREATED BY IOWA PHYSICIANS, 1955
BY DIAGNOSIS MADE
(A PROJECTION)

Category	*Number*	*Per Cent*
Patients treated with primary diagnosis of alcoholism	4,350	37.2
Patients treated with secondary diagnosis of alcoholism	7,317	62.8
TOTALS	11,667	100.0

In Table 4, we have classified physicians by type of practice, and on the basis of the returns to our questionnaire, we have projected the numbers of patients in each diagnostic category who can be presumed to have been treated by physicians of each type.

TABLE 4

ALCOHOLIC PATIENTS TREATED BY IOWA PHYSICIANS, 1955
BY TYPE OF PRACTITIONER AND BY DIAGNOSIS MADE
(A PROJECTION)

	Patients with primary diagnosis of alcoholism.	Patients with secondary diagnosis of alcoholism.	Total of previous two columns.	Average number of patients per physician.	
Types of Practitioners					
General Practitioners	3,491	5,579	9,270	7.26	
Psychiatrists	180	266	446	28.44	
Internists	291	518	809	8.99	
Other Specialists	388	754	1,142	1.12	
TOTALS	4,350	7,317	11,667	4.86	(av.)

Table 4 indicates that in all types of practice, the physician treats more patients with secondary diagnosis than with primary diagnosis of alcoholism. What this means is not clear. It is likely that

a difference exists among physicians in the various types of practice as well as within a given type of practice as regards what diagnosis should be given. That is, one physician may feel that in a given case alcoholism is the primary factor, whereas another physician analyzing the same case would regard it as a secondary factor. However, this would not explain the disproportionate number of secondary diagnoses.

One possible explanation for the difference is that more of the patients who were treated were chronic alcoholics having complications, and thus alcoholism was especially often a secondary diagnosis. That theory is supported by the fact that 56 per cent of the patients were said by the physicians to have been repeaters.

Further analysis of the data revealed that a minority of the physicians treated the majority of the patients with alcoholism. Of all patients treated by general practitioners, 87 per cent were treated by 44 per cent of the general practitioners. Of those treated by psychiatrists, 89 per cent were treated by 57 per cent of the psychiatrists. Of those treated by internists, 78 per cent were treated by 37 per cent of the internists. And of those treated by other specialists, 38 per cent were treated by 2.8 per cent of the other specialists. Over all, 27 per cent of the physicians treated 80 per cent of the patients.

TYPES OF TREATMENT

Not all of the alcoholics who are treated by physicians are treated for alcoholism. Presumably, some treatment is directed toward the illnesses to which alcoholics, as well as other people, are susceptible. Yet one cannot draw a hard and fast line between treatment for other illnesses and treatment for alcoholism. In fact, it would appear that in the case of the alcoholic, treatment needs to be comprehensive, thus involving physical and organic restoration as well as psychologic and social restoration.

In the questionnaire, physicians were asked to specify the general type of treatment they gave the alcoholic. The results are given in Table 5.

TABLE 5

GENERAL TYPE OF TREATMENT GIVEN BY IOWA PHYSICIANS, 1955

Type of Treatment Given	*Physicians* Number	Per Cent
Physical restoration only	48	23
Physical restoration plus treatment of alcoholism at physiologic level	57	28
Physical restoration plus psychotherapy	61	29
Combinations of above types of treatment	41	20
TOTALS	207	100

If the 207 physicians who responded to the question may be taken as representative of the physicians in the state, there must be considerable variation in the general type of treatment given alcoholics. What may be indicated is that a number of physicians treat the alcoholic in a physical sense. That is, they restore him to organic health as completely as possible, and then refer him to other physicians or to other resources for further and continuing care and/or therapy. The general type of treatment may, of course, reflect the view which the physician has of the alcholic and of alcoholism.

In Table 6 is a distribution of the returns in regard to the more specialized technics which Iowa physicians employ in the treatment of alcoholics.

TABLE 6

SPECIFIC TYPES OF TREATMENT USED BY IOWA PHYSICIANS

Technic	*Answers on Questionnaires* "Yes"	"No"	*Per Cent* "Yes"*
Take liquor away immediately	146	23	86
Gradually withdraw alcohol and substitute a sedative	60	44	58
Use tranquilizers	175	21	89
Use tetraethylthiuram disulfide	26	64	29
Encourage patients to associate with Alcoholics Anonymous	212	13	94
Use individual psychotherapy	103	34	75
Give psychotherapy to patient's family	77	35	75

* Percentage of those responding to each item.

Although it is possible that the technics that any one doctor may use depend in some measure on the characteristics of the individual patient, the data seem to indicate that Iowa physicians, on the average, favor (1) taking liquor away immediately, (2) use of tranquilizers, (3) psychotherapy both for the patient and for his family, and (4) association with Alcoholics Anonymous. The climate of opinion seems to oppose the use of tetraethylthiuram disulfide.

REFERRALS

It is becoming more and more widely recognized that the successful treatment of the alcoholic depends upon what has been called a "joint attack" on the problem. Physicians also realize that much of what they accomplish in a medical way is apt to be wasted unless the alcoholic is given other and continuing sources of help. A joint attack on the problem would involve the cooperative efforts of hospitals, Alcoholics Anonymous, physicians, social welfare agencies, law enforcement officials, clergymen and others, and an effective system of referrals among them.

Physicians were asked to indicate on the questionnaire what resources existed in their communities, and to which of them they most often referred alcoholics for help. The responses to these questions are given in Table 7.

One inference which can be drawn from the information in Table 7 is that in many communities the physicians do not have resouces to which they can refer alcoholics for help. For example, only 55 per cent of them indicated that a hospital

TABLE 7

COMMUNITY RESOURCES FOR USE IN HELPING ALCOHOLICS

Resource	Physician's Answers to Questionnaire "Available"*	"Most Frequently Used"**
Alcoholics Anonymous	268	167
Other physicians	142	49
Social agencies	79	5
Clergy and Salvation Army	186	20
Hospital	173	48
Clinic	35	5
Psychiatrists	7	3
Veterans Administration facilities	4	1
Other facilities	16	4

* Total number of physicians responding about availability was 314.
** Total number of physicians responding about use was 243.

was available in the community to which alcoholics could be referred. Alcoholics Anonymous appears to have been the most available resource, and it seems most frequently to have been the resource used. Another inference that can be drawn on the basis of the information in the table is that the more readily available a given resource is, the more use is made of it.

Not every resource listed in Table 7 could be expected to be available in every community. There is also a lack of resources in most communities for the alcoholic who is in need of hospitalization or therapeutic care requiring special facilities and personnel. Thus, inquiry was made about the pattern of physicians' referrals to resources outside the community. The responses are given in Table 8.

TABLE 8

IOWA PHYSICIANS' USE OF RESOURCES OUTSIDE OF THEIR COMMUNITIES, 1955

Resource Outside of the Community		Physicians Indicating Use of Resource*
State Mental Health Institutes		
Independence	33	
Mt. Pleasant	16	
Cherokee	20	
Clarinda	15	84
Private hospital		55
Private physician or psychiatrist		45
Alcoholics Anonynous		23
Veterans Administration Hospital		6
Out of state facilities		11
Others		13

* Total physicians responding to the question was 277; those who said that they had made one or more referrals totaled 173.

Approximately 62 per cent of the physicians who responded to the question concerning referrals to resources outside their communities indicated that they had made such referrals. Of all such referrals reported, 35 per cent were to the State Mental Health Institutes. Of equal importance are the referrals made to private physicians, psychiatrists and hospitals. Together, they constitute 42 per cent of the referrals made to outside resources.

PHYSICIANS' VIEWS OF THE ALCOHOLISM PROBLEM IN THE STATE

Physicians were asked to give suggestions which they thought would contribute to the formulation of a program to meet the needs relative to the problem of alcoholism in Iowa both on the community and on the state level. Of the 502 physicians whose replies were used in the study, only one-fifth contained specific suggestions. However, of the physicians who treated alcoholic patients, approximately 42 per cent gave suggestions. These are summarized in Table 9.

TABLE 9

COMMUNITY AND STATE NEEDS AS REGARDS THE PROBLEM OF ALCOHOLISM POINTED OUT BY IOWA PHYSICIANS, 1955

Type of Need	Community*	State*
Treatment Facilities		
Inpatient	19	33
Outpatient	18	14
	37	47
Education		
For public and alcoholic	42	33
For physicians	8	13
	50	46
Legal		
Change in laws	2	13
Closer regulation	18	27
Prohibition	1	0
Liquor by the drink	3	14
	24	54
General		
Strengthening of existing facilities	0	6
State program	0	8
Cooperation with Alcoholics Anonymous	23	0
Nothing needed	1	0
	24	14

* Some physicians expressed more than one need.

The most obvious feature of the suggestions summarized in Table 9 is the similarity in the needs that the doctors saw on both the community and state levels. However, there were certain variations that may be of significance. The most pressing need in the community, as the physicians saw it, seems to be in the field of education, whereas on the state level, the principal needs seem to be in the area of laws and legal activity, although treatment facilities and education come close behind. The entire picture seems not to indicate a predominant need in any area. There is relatively strong emphasis on the matter of treatment facilities both at the community and at the state level. It is of interest to note, in this respect, that the need for inpatient facilities was seen as proportionately much greater on the state level than at the community one. Also of interest are the non-medical recommendations such as those for changes in the laws and in the enforcement of laws. These were relatively strongly urged by the physicians. Thus it appears that doctors are fully aware of the social and political factors that are related to the medical aspects of alcoholism. It

may be noted also that only one physician clearly indicated that he thought nothing in the way of a program was necessary, and he made that observation only as regards the community level.

OTHER FACTORS

One of the persistent themes in the comments made by physicians was the difficulty which attends the treatment of patients with alcoholism.

When asked their preference as regards hospitalizing alcoholics who have no definite need for physical restoration, 57 per cent of the doctors who replied said they would choose outpatient over inpatient treatment.

In the matter of referrals to the physicians, relatives and friends of the alcoholic were the main source, followed closely by self-referral.

Out of the 314 physicians who answered the inquiry regarding research on the problem of alcoholism, six answered that they were in the process of conducting such study.

In general, the data revealed that the longer the physician had practiced in his community, the less likely he was to treat patients with alcoholism. The notable exception to this general rule was that physicians who had spent 50 years or more in practice, in many instances, had a higher rate of treating alcoholics than the average physician. The close correlation among such factors as age, years in practice and years of service to a given community in a number of the physicians who reported treating alcoholics is, however, a thought-provoking circumstance.

SUMMARY

The survey of Iowa physicians indicated that approximately half of them treated one or more alcoholics during the year 1955. The data contained in 502 physician returns were projected to the state, and the extrapolation indicated that during 1955, 11,667 patients were treated for alcoholism in Iowa. In 62 per cent of the patients, alcoholism was the secondary diagnosis.

The medical care of alcoholics was shown to involve a complex pattern of treatment, referral, resources and need. Each aspect in some degree indicates that alcoholism is a major problem in this state.

Postgraduate Courses at Iowa City

Following is a preliminary announcement of all the postgraduate courses to be offered during the academic year 1957-1958 at the S.U.I. College of Medicine, in Iowa City. Detailed programs will be mailed to Iowa physicians three or four weeks in advance of the respective meetings, but prior to the issue of such material, further information can be secured from W. C. Keettel, M.D., director, Postgraduate Medical Studies.

PEDIATRIC COURSE

September 10-11

The Iowa Pediatric Society, the Department of Pediatrics at S.U.I. and the Bureau of Child Health will sponsor a joint program of interest both to general practitioners and to specialists. There will be several guest speakers, and there will be three general topics: (1) children with behavioral problems or mental retardation; (2) pediatric surgery; and (3) diagnostic and therapeutic aspects of such diseases as rheumatoid arthritis and cystic fibrosis of the pancreas.

IOWA UROLOGICAL SOCIETY

September 27-28

At the annual meeting of the Iowa Urological Society, the program will be presented by members of that group and by the faculty of the S.U.I. Department of Urology. It will be of particular interest to specialists, but other physicians are welcome to attend.

MIDWESTERN CARDIAC CONFERENCE

October 3-5

This two and a half day meeting will be sponsored by the Iowa Heart Association and the College of Medicine, and it will interest both internist and general practitioner. The program appears on page 600 in this issue of the Journal.

RADIOLOGY

October 25-26

The Iowa Radiological Society and the staff of the S.U.I. Department of Radiology will sponsor this program. It will emphasize important problems encountered in radiologic diagnosis, and there will be demonstrations of certain technics. Some new equipment recently installed will be on display. All physicians are invited to attend.

IOWA-NEBRASKA NEUROPSYCHIATRIC SOCIETY

October 26-27

The Iowa-Nebraska Neuropsychiatric Society will hold its annual meeting in Iowa City on October 26 and 27. The program will consist of didactic lectures and a discussion of research and treatment of schizophrenia. One or two outstanding guest speakers will participate. Physicians who are not members of the Society will be welcomed.

TRAUMA AND FRACTURES

November 6-7

The S.U.I. Departments of Medicine, General Surgery, Orthopedics and Otolaryngology will cooperate in presenting the program on trauma and fractures. Fractures of the bones of the face, wounds of the face and methods of handling specific wounds of the hand will be discussed. The recognition and management of cardiac arrest will be demonstrated on dogs, and there will also be demonstrations of the reduction and immobilization of fractures. A nationally prominent surgeon will speak on the handling of the patient with multiple injuries. Physicians who attend the meeting will be invited to present fracture problems that they wish to have discussed.

NORTH CENTRAL SECTION, AMERICAN UROLOGICAL ASSOCIATION

December 2-4

At the regional meeting of the American Urological Association which is to take place at the S.U.I. Memorial Union on December 2-4, there will be two guest speakers from the Mayo Clinic, one each from the Cleveland Clinic, the University of California, the Armed Forces Institute of Pathology, the University of Kansas and the University of Chicago.

A course on gross microscopic pathology as related to the urinary tract and a panel discussion of radiographic diagnosis applied to urologic conditions will be presented. An entire afternoon will be devoted to urologic endocrinology, and another afternoon will be devoted to pediatric urologic problems. The treatment of hypospadias and of various congenital malformations of the bladder neck will be discussed by a panel consisting principally of guest speakers. The registration fee will be $60, and outside physicians are welcome to attend the specialized course in urology.

TUMOR CONFERENCE

December 11-12

This meeting will be sponsored jointly by the Iowa Division of the American Cancer Society and the S.U.I. College of Medicine. It will be of special value to physicians interested in neoplastic diseases, such as the general surgeon, the obstetrician-gynecologist, the internist and the radiologist. Prominent guest speakers will participate, and the sessions will include ward rounds, panels, isotope demonstrations and a review of some controversial aspects of therapy.

GENERAL SURGERY

February 4-5

The subjects to be covered in the short course on general surgery include peripheral vascular disorders, the emergency and definitive management of peptic ulcer, a variety of biliary-tract disorders and surgical considerations of thyroid disease. A nationally prominent surgeon will be the guest speaker.

REFRESHER COURSE FOR THE GENERAL PRACTITIONER

February 18-21

The Iowa Academy of General Practice and the State University of Iowa College of Medicine will sponsor a review course for the generalist, emphasizing recent advances in each of the fields in which generalists are interested. The first day will be devoted to internal medicine and allied specialties; the second day to surgery; the third day to obstetrics and gynecology; and the fourth day to pediatrics. The faculty of the College of Medicine will be assisted by outstanding guest speakers in various fields.

PSYCHOLOGY

March 3-4

The course on psychology, of interest to the professional worker in mental health, is to be presented by the Division of Psychology in conjunction with the Department of Psychiatry of the S.U.I. College of Medicine. The topics are to include the technic of personality assessment, the measurement of intelligence, and treatment methods. There will be symposia on children's adjustment problems and on research in mental health. A diagnostic workshop will be held, at which participants will have an opportunity to present case material of their own.

ANESTHESIA

March 18-19

On the first day of this meeting there will be a symposium on depth anesthesia and practical factors in determining the response to drugs. There will also be a symposium on hypertension that first day. On the second day, there will be a discussion of local anesthesia, recovery-room problems and experiences with Fluothane. There will be three guest speakers.

MEETING SPONSORED BY THE AMERICAN COLLEGE OF PHYSICIANS

June 16-20 (tentative)

This meeting—though as yet it is tentative—is planned to include topics of special interest to the internist and the general physician. It will cover diseases of the heart, lungs, gastrointestinal tract and endocrine system. Most of the speakers will be from the S.U.I. Department of Internal Medicine, but there will be five guest speakers from other Midwest institutions. The course will be sponsored by the American College of Physicians, and the tuition will be $30 for members of that organization. For non-member physicians, it will be $60. Registration will be limited to 100 doctors.

Scientific Articles

The History of Treated Diabetes Mellitus

A Contrast of the Young and the Old

IRVING L. SPRATT, M.D., AND ROBERT C. HARDIN, M.D.

IOWA CITY

Diabetes mellitus is a common disease frequently met by every physician. Even those not directly concerned with its management must understand its natural history and variations, for among their patients will be some in whom diabetes has influenced the progression of an intercurrent disorder or has complicated its therapy. In the pre-insulin era, though the course of diabetes was altered by treatment, its diagnosis implied a grave prognosis and a very short life expectancy, especially in children. Since the discovery of insulin, the lives of diabetic patients have been prolonged remarkably, but serious degenerative disease frequently accompanies the added years. With advances in therapy, there has been a gradual change in the ordinary progression of the disease. Fewer patients fall victim to acute complications, and more reach the later stage when degenerative disease is the prominent danger. Then too, there are many patients who developed diabetes during childhood and are now young adults. In them, the pattern of degenerative disease differs from that encountered in those who developed the disease later in life. Familiarity with this entire clinical panorama is necessary for understanding the individual patient. To gain this perspective, two groups of patients treated at the University Hospitals have been studied and compared.

THE FIRST GROUP OF PATIENTS

The first group of patients was composed of 300 who were admitted during the calendar year 1956, and they were divided into two sub-groups. There were those who had been admitted in previous years, numbering 167, of whom 132 had been treated formerly for diabetes. The remaining 35 had been admitted previously with other disorders and came to the hospital in 1956 because of newly developed diabetes, or were found to have that disease during the 1956 admission. The second subgroup consisted of 133 patients admitted to the University Hospitals for the first time in the period from January to June, 1956. They came because of diabetes, or were found to have it after their arrival. The patients ranged in age from 18 months to 91 years (Table 1). Eleven were children admitted to the Department of Pediatrics. Of the adults, 173 were women and 116 were men. Thus there was the usual ratio of three women to two men. Half of the women were over the age of 62, and half of the men were older than 66. Diabetes is essentially a disease of the elderly, and in this group the men tended to develop the disease at a later age than the women.[1] Although diabetes is more prevalent among older patients, it occurs at all ages, as is illustrated by the fact that 55 of these 300 patients were less than 40 years of age. There were 62 patients who had developed diabetes before the age of 40, and 30 of them did so before reaching 15.

TABLE 1

AGE AND SEX

Age Range	18 months to 91 years	
Patients under age 15	11	
Patients over age 15	289	
Adult Patients	*Number*	*Median Age*
Women	173	62
Men	116	66

Although the average age of this group was high, more than half of the patients had had a duration of diabetes of less than nine years. This is expected, of course, of a disease which has its greatest incidence in later life. There were only 18 who had

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had the disease for more than 20 years, and another nine who had passed into the fourth decade of the disease (Table 2). These facts are of interest with reference to the numbers and types of complications evident in the group.

TABLE 2
DURATION OF DIABETES

50-59 years	2
40-49 years	2
30-39 years	5
20-29 years	18
10-19 years	80
0-9 years	188
5-9 years	47
6 months-4 years	64
0-6 months	77
Diagnosed on admission	60

As has been noted, 60 patients were discovered to have diabetes after admission to the hospital. Only 21 of them had symptoms which immediately suggested the probability of diabetes, and the others were discovered during examination and treatment for some unrelated, coexisting disorder or upon recognition of some complication of diabetes which often had a somewhat obscure relation to the underlying disease. Fifteen had unrelated disorders, and in them, the discovery of diabetes must be regarded as incidental. There were 14 different diseases in these 15 patients. Six had neoplasms, two had herniae and there was one example each of functional uterine bleeding, epilepsy, hypertrophic arthritis, prolapsed uterus, gastro-colic fistula, pernicious anemia and neurolues. Twenty-four of the 39 patients had disorders which were possible complications of diabetes or which might affect diabetes adversely. The largest number, a group of 14, had degenerative cardiovascular disease with arteriosclerosis obliterans as the most common manifestation, and heart failure as the second most common. There were six instances of infection, including one example each of furunculosis, peridontitis, empyema of the gallbladder, pneumonia and perirectal abscess. Two patients had endocrine disorders, one having hyperthyroidism and the other myxedema. The remaining two patients had frank complications of diabetes which had not been recognized previously. In one, there was the clearly associated skin disorder necrobiosis lipoidica diabeticorum, and in the other there was peripheral polyneuritis complicating mild and otherwise asymptomatic diabetes. These 39 patients came to the hospital because of symptoms of the disorders listed above and with undetected diabetes. In some, its presence seemed to be incidental. Our experience illustrates the ubiquitousness of diabetes and the high incidence of mild diabetes in elderly persons. Secondly, it must be remembered that diabetes may underlie some more obvious disorder, and that this is particularly true of degenerative cardiovascular disease and infection.

Although the average duration of diabetes in the entire group of patients was short, complications were present in considerable numbers. The same relative incidence of complications was found in the 300 as was evident in those in whom the diagnosis was first made after admission to the hospital. Most common were degenerative diseases of the cardiovascular system (Table 3). Generalized

TABLE 3
COMPLICATIONS
300 PATIENTS

	Number	*Per Cent*
Degenerative Cardiovascular Disease		
Generalized Arteriosclerosis	124	41
Coronary Arteriosclerosis	76	25
Heart Failure	39	13
Peripheral Occlusive Disease		
Ulceration	33	11
Gangrene	43	14
Ocular Disease		
Diabetic Retinopathy	87	29
Diabetic Cataract	61	20
Glaucoma	11	3
Infections		
Genito-urinary Tract		
Pyelitis and Pyelonephritis	13	4
Cystitis	9	3
Vaginal Moniliasis	6	2
Epididymitis	3	1
Lungs and Bronchi		
Tuberculosis	8	3
Pneumonia	5	2
Bronchitis	2	1
Bronchiectasis	1	
Lung Abscess	1	
Bone	5	2
Deep Space, Foot or Hand	5	2
Skin	4	1
Blood Stream	3	1
Miscellaneous	11	3
Neuropathy		
Polyneuritis	42	14
Trophic Ulcer	3	1
Trophic Bone Disease	2	1
Degenerative Renal Disease		
Albuminuria, only	14	5
Severe Renal Disease	20	6

arteriosclerosis was present in 41 per cent of the patients. Twenty-five per cent had arteriosclerotic heart disease, and half of those were in myocardial failure. Ten had myocardial infarcts. A fourth of the group had peripheral arteriosclerosis obliterans with either ulceration of the skin or frank gangrene, and in 32, amputation of the leg or a portion of the foot was necessary. The incidence of amputation among men and among women was equal. Although degenerative vascular disease in diabetics is generally regarded as appearing in the second and third decades of the disease, it occurs, on the average, earlier in older patients. Of course they may have arteriosclerosis at the time of onset of diabetes. In this group, those with arteriosclerotic heart disease had a median age of 69 and a median duration of diabetes of seven years (Table 4). The median age for those who had occlusive peripheral vascular disease was 67, and the median duration was nine years. In the instance of generalized arteriosclero-

TABLE 4
ARTERIOSCLEROTIC DISEASE

	Median Age	Median Duration
Heart Disease	69	7 years
Occlusive Disease	67	9 years
Generalized Arteriosclerosis	70	9 years

sis, the median age of the patients was 70, and the median duration of diabetes was nine years.

Degenerative disease of the retina was present in 29 per cent of the patients. Among all diabetics, retinopathy develops, on the average, about 13 years after onset of diabetes.[2] However, among older patients, as this group illustrates, there is a tendency for retinopathy to appear in a much shorter period. Of the 28 patients over the age of 60 who had retinopathy, 16 had developed it within the first five years. Furthermore, eight patients ranging in age from 45 to 65 years had developed retinopathy within the first year, and seven ranging in age from 60 to 78 had retinopathy at the time of diagnosis of diabetes. The other ocular complications included cataracts and glaucoma. Cataracts were present in 20 per cent of the patients, an incidence similar to that reported by others.[3] Eleven patients were found to have glaucoma.

Twenty of the group had serious nephropathy associated with retinopathy and hypertension. Eleven had had the onset of diabetes under the age of 50, and four of them had developed renal disease within the first 10 years. In contrast, the remaining nine all had developed diabetes after the age of 50, and all had nephropathy before the tenth year of diabetes. This indicated the same propensity among older patients to develop degenerative disease within a short period as was noted in the case of arteriosclerosis and retinopathy.

Fourteen per cent of the patients had peripheral polyneuritis. This complication can be the presenting manifestation, for it occurs in some persons with very mild and otherwise asymptomatic diabetes. This occurrence was illustrated by one patient in this series. Neuropathy may be accompanied by trophic ulcers occurring over pressure points on the foot, and such phenomena were noted in three instances. Others[4] have noted during recent years a seeming increase in the number of diabetic patients with trophic bone disease similar to that accompanying other neuropathies. There were two instances in the group and, as is usual, the involvement was of the metatarsals.

Infection is a common complication of diabetes. In this group, there were 71 patients who had one or more infectious processes at the time of admission. The number of separate infections was 76. The most common site was the urinary tract, and the entities in most cases were pyelitis, pyelonephritis or cystitis. Infections of the respiratory tract were next most frequent, and among these pulmonary tuberculosis ranked first, accounting for approximately half of the cases. The overall incidence of tuberculosis was three per cent, but the figures may have been weighted, for all pulmonary surgery for the State Tuberculosis Sanitorium is done at the University Hospitals.

This first group of patients represents the ordinary spectrum of diabetes as it is seen in practice and among hospital admissions. In general, onset occurs late in life, and by that time, many of the patients may already have degenerative disease. In any group, a few patients will have had diabetes for relatively long periods of time, but in most of them the duration will have been less than 10 years. Degenerative vascular disease is the most common complication, and it is most apt to make itself clinically manifest by diminishing the coronary circulation or the blood supply of the legs. These, as well as retinopathy, tend to appear early in those who develop diabetes after the age of 50. In fact, retinopathy may be present when the diagnosis of diabetes is established. Infection is also a very common complication among older diabetics, and is most likely to be in the urinary tract or respiratory system.

THE SECOND GROUP OF PATIENTS

The second group of patients is one which has been subjected to a much more detailed study. It is composed of 132 young adults, all of whom developed diabetes early in life and have had their disease for more than 10 years. They have been followed in the clinics of the University Hospitals throughout their entire course. The history of the progression of their disease is much different from that of the group just described.

Surveys have been made from time to time to learn what factors might be associated with degenerative disease. So far as can be determined, there is no relationship between the incidence and severity of degenerative disease, and the age of onset of diabetes, its severity or the sex of the patient. In earlier studies of the group,[5] the only two factors which seemed to influence the appearance of degenerations were the duration of diabetes and the degree of control achieved. The relative importance of these two factors was later clarified by serial observations which showed that, except for the average of 13 years necessary for degenerative disease to appear, duration of diabetes has no influence. However, the degree of diabetic control achieved had a high degree of correlation with the incidence and severity of degenerative lesions.[6]

At the time of the last survey, this group had a median age of 24.3 years, and the median duration of diabetes was 16.5 years. The range of duration was from 10 to 30 years.

Clinically identifiable cardiovascular disease was rare in this group as compared with the older one. None of the patients had manifest arterioscle-

rotic heart disease, although 28 had changes in their electrocardiograms consisting of minor T-wave and S-T segment changes or evidence of left ventricular hypertrophy. The occurrence of these changes did not correlate with the age of the patient or with the duration of diabetes. Hypertension, as judged by an elevation of diastolic pressure above 90 mm. Hg., was present in only 11. Twenty-six had peripheral vascular disease evidenced by reduction of pulse volume, increased hardness of arteries on palpation or calcification of vessels in the feet as shown by radiologic examination.

Ocular degenerative disease was the commonest complication. Retinopathy of some degree was present in 51 per cent of the patients. In only 17 per cent was it advanced, but another 34 per cent had the pathognomonic microaneurysm. Development of even minor retinal lesions before the tenth year of diabetes was extremely rare (Table 5).

TABLE 5

RETINAL CHANGES—132 JUVENILE DIABETICS

	Number	*Per Cent*
Normal Retinae	68	48.5
Micro-aneurysms only	48	34.3
Advanced Retinopathy	24	17.1

Twenty-two of the patients had cataracts, an incidence of 17 per cent. Two patients died of renal failure at the ages of 31 and 33 years, and with a duration of diabetes of 21 and 22 years, respectively. Ten others had traces of albumin in the urine which persisted and were not associated with infection. This symptom was taken as presumptive evidence of diabetic nephropathy of minimal degree. Neuropathy was also rare. One patient had diabetic pseudotabes, with a cord bladder. Permanent suprapubic cystostomy was necessary and has resulted in chronic pyelitis. Other infections, except for those of the upper respiratory tract and exanthemata common in childhood, have been rare. The only other serious infection has been one instance of pulmonary tuberculosis which subsequently became arrested.

In general, this group of juvenile diabetic patients have been healthy, and have grown and matured normally. During the first 10 years of their disease, there were few complications, and they were not clinically serious though some of them progressed during the second decade of diabetes. In the period following the tenth year, complications began to appear, and the most frequent was retinopathy. Clinical heart disease was not encountered in the group, and although 19 per cent had changes in the peripheral arteries discoverable by careful examination, none had arterial insufficiency of the legs or feet. There were no ulcerations of the skin nor gangrene. Serious nephropathy did not appear until after 20 years of diabetes, although seven per cent of the patients had minimal albuminuria as evidence of probable kidney disease. It is assumed that frank nephropathy is likely to develop at a later date. The group was relatively free of serious complications, although all had a duration of diabetes exceeding 10 years, over half had passed the fifteenth year and a third had passed the twentieth. The incidence of degenerative disease was not related primarily to duration, but the complications occurred in those patients with the poorer degrees of diabetic control.

DISCUSSION

Contrast of these two groups of patients illustrates some of the features of diabetes that deserve emphasis. Ordinarily, the disease is regarded as having as its chief characteristic a profound aberration of metabolism of which the most easily recognizable part is an inability to utilize carbohydrate in a normal fashion. Added to this is a predilection to develop degenerative disease involving blood vessels. This has long been expressed as the generalization that diabetics grow old early, and that aging, in them, proceeds at an accelerated rate. This is not entirely true, for certain degenerative lesions are peculiar to diabetes. The essential change of diabetic retinopathy is a capillary aneurysm which occurs in no other disease.[7, 8] The glomerular lesion of diabetic nephropathy is not identified so clearly, but it also is associated with the capillary. It probably occurs in the same patients at the same time as the retinal lesion, but instead of being aneurysmal, it is a deposition of hyaline substance in the center of the glomerular loop.[9, 10] The other vascular degenerations, atherosclerosis and arteriolarsclerosis, are not different from those occuring in patients without diabetes except for their early appearance and rapid progression. Therefore, it would not be surprising to find some dissociation in the incidence of these two kinds of degenerations. That this is true is illustrated by the two groups of patients in this study. Both types of degeneration were present in the two groups, but from the standpoint of numbers and clinical importance, there were real differences. In the older group, 41 per cent had clinically significant arteriosclerosis. In the juvenile series, although careful examination showed involvement of peripheral arteries in 19 per cent, none had any arterial insufficiency. Contrasted with this, 25 per cent of the older group had skin ulceration or gangrene. A similar difference was noted as regards clinically apparent arteriosclerotic heart disease. This was present in a fourth of the older group. Heart failure was common, and 10 had myocardial infarcts. Clinical heart disease was unknown in the juvenile group, although hypertension was noted in 11 and minor electrocardiographic changes were found in 28 instances. These differences existed even though

the younger patients had a significantly longer duration of diabetes.

In the unique capillary degeneration of the retina, the situation was reversed. The incidence among the younger patients was twice the incidence in the older. This might be explained by assuming that time was the important factor, since the mean duration of diabetes in the younger group was also twice that in the older. However, although the younger patients had more retinopathy, it tended to appear earlier in the course of the diabetes in the older patients—a factor which offsets the longer duration in the younger group and makes the difference in incidence of retinopathy more significant.

Serious renal disease was more frequent in the older group. That may seem illogical, since that disorder, if it were intercapillary glomerulosclerosis, could be expected to have an incidence similar to that of retinopathy. But the clinical diagnosis of the entity is made on evidence of kidney damage occurring with diabetes, and that evidence is the same as is found in other degenerative renal diseases such as nephrosclerosis. There is no simple clinical method which will surely separate these entities. Even the doubly refractile bodies in the urine which have been thought unique to intercapillary glomerulosclerosis are not always present[10] and indeed have been reported to occur in other types of kidney disease.[11] It seems probable that most of the patients in this series had nephrosclerosis. In the absence of pathologic examination of the kidneys, however, this question cannot be resolved.

The outstanding fact revealed by this comparison would seem to be that atherosclerosis and arteriolarsclerosis are not necessarily concomitant with the capillary degenerations, and this dissociation is most apparent at the extremes of age of onset of diabetes. It is a corollary of this observation that the young patient is prone to capillary degeneration, and escapes, for a considerable time at least, clinically significant disease of the larger vessels. Contrariwise, the usual patient whose diabetes appears late in life is likely to have arteriosclerosis clinically manifested by insufficency of circulation in the legs and heart disease. He has capillary lesions, too, but they are not the outstanding feature of his disease. However, these may appear after a shorter duration of diabetes than in younger patients.

These findings allow for speculation concerning several possibilities. It may be that in these patients the metabolic defects of diabetes have been present for some time without the disease's becoming overt. Or, perhaps, vascular degeneration antedates the diabetes and is explosively accelerated by its advent. Others have suggested that some individuals have a hereditary predisposition to vascular degeneration, and that this is activated by diabetes.[12]

The present-day spectrum of diabetes is the result of treatment which allows those with the disorder to escape acute complications and to survive for long periods, thus sharing in the general longevity which marks our time. The chronic complications have emerged as the prime problem in the management of diabetes. Most of these are vascular, but others have been recognized with increasing frequency. Evidence of involvement of the peripheral nerves has been found by quantitative measurement of the vibratory sense in many diabetics between the ages of 10 and 20, but frank polyneuritis is rare.[12] One of the patients in this study, an individual who had contracted diabetes at the age of four years, had diabetic pseudotabes developing early in the second decade of his diabetes. However, neuropathies are more characteristic of the older age group, and in addition to the ordinary polyneuritis, they include trophic degeneration of the skin and bone, and involvement of the sympathetic nervous system, with nocturnal diarrhea, orthostatic hypotension, abnormalities in sweating and impotence.[13, 14]

SUMMARY

The problems of diabetes which must be faced today are quite complex. The patients are of all ages, but most are elderly and have disease of relatively short duration. In a lesser number, the onset of diabetes has been early in life, and for the first 10 years, no clinically serious complications occur. Later, capillary degeneration may appear, and its chief manifestation is retinopathy. Contrastingly, the older patients have as their most frequent complication arteriosclerosis affecting the legs and the heart. This is greater both in incidence and in severity than among persons of equal age without diabetes.[1] Infections, particularly of the respiratory system and urinary tract, are common in older diabetics.

Diagnosis of diabetes is usually easy in the young because the severity of symptoms is such that its presence is clearly suggested. The older patient more often has mild diabetes, but this fact seems to bear little relation to the severity of complications. In fact, from the clinical point of view, the complication may precede diabetes, and the physician must be ever alert to this possibility.

Finally, in treatment of the young, the main concern must be with the diabetes, which is often difficult to manage but which exacts a penalty for failure. The older patient poses no great problem in control of diabetes, for it is usually mild. But he requires maximum attention for his complications.

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Orinase—For Use or Abuse?

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"DIABETES PILLS," as laymen call them, have now been made available commercially. After exhaustive experimental and clinical studies[1, 2, 3, 4, 5] oral hypoglycemic drugs have become an acceptable tool in the management of diabetes.

The release of Orinase poses a challenge to all practitioners. Every diabetic will immediately want to discard insulin, syringes and dietary restrictions. Physicians, likewise, will be tempted by the simplicity of oral drug prescription. Unless the indications and limitations are understood, much harm can be done. Cases have already been seen with difficulties resulting from ill-advised change-over. Thus, a review of the proper use of these hypoglycemic agents is very timely.

In 1941, Janbon and his colleagues,[6] while working with sulfa drugs for the treatment of infections, noted that they had the incidental side effect of hypoglycemia. During the next three years, Loubatieres[7, 8, 9] studied many closely related sulfa derivatives and confirmed this effect. In 1954, Professors Frankes and Fuchs,[10] of Berlin, used a compound called BZ55 to treat diabetics. Since then, thousands of patients on the continent have been so managed with apparent success. This approach seemed to be the answer to the long search for an antidiabetic tool which would eliminate the disadvantages of hypodermic administration.

The drug was first introduced in the United States in November, 1955. Experiments of every conceivable type have since been conducted in an attempt to determine the site and mode of its action,[11, 12, 13] and even a skeletal review of those studies would be far too time-consuming and technical to warrant inclusion in this paper. Suffice it to say that the physiology of its action is still empirical.

BASIC TRUISMS

Its clinical action, however, is well documented.[14] Many of the finest students of diabetes have independently arrived at basic truisms with surprising unanimity. They are as follows:

1. Juvenile diabetics will fail to respond satisfactorily.

2. Adults who have the more severe cases or are experiencing acute complications will be similarly refractory.

3. The drug will afford satisfactory control in 75 to 85 per cent of diabetics when it is substituted for no more than 20 to 40 units of insulin. Why it fails in the other 15 to 25 per cent is not understood. If the severity of the disease is such as to require more than 40 units, the patient is likely to be resistant to the oral agents. Duncan was able, however, to reduce insulin dosage in some severe diabetics by oral supplementation.

4. The greatest potential field of usefulness consists of those patients whose diabetes might possibly be controlled by dietary measures or weight control, but who will not or cannot accept such limitations.

5. It should be remembered that the present antidiabetic drugs are sulfa compounds and should not be employed in persons allergic to such medicaments.

It has thus become apparent that the drug is not a cure-all, and that it is useful only in selected cases. Furthermore, such patients are not so numerous as had at first been anticipated.

SELECTING PATIENTS AND DETERMING DOSAGE

Individuals appropriate for this treatment may be selected by a simple screening process.[15] A test dose of 2 Gm. is given in the fasting state. A fall of the blood sugar of at least 20 per cent should occur within four hours in eligible cases.

The dosage of the drug varies from 0.5 to 2.0 Gm. or more per day. This may be given in a single dose or in divided doses. The drugs are rapidly absorbed from the gastrointestinal tract, and adequate blood levels can be demonstrated within three hours. The compounds are slowly excreted by the kidneys either unchanged or in an acetylated form. Unlike insulin, the drug produces

a hypoglycemic effect that persists for several days following the cessation of therapy.

The diet need not be calculated or measured, but extremes of either restrictions or allowances should be avoided.

Careful follow-up studies are recommended. During the initial period of administration, frequent urine analyses, white blood counts with differentials, and physical examinations are made. When indicated, renal and hepatic function tests should also be performed.

SIDE EFFECTS

The immediate side reactions are practically nil. Idiosyncrasies have been reported in only about 3 per cent of cases. These consisted of mild dermatitis, gastrointestinal symtoms and hematopoietic depressions. None were serious, and all were immediately reversible upon withdrawal of therapy. The Upjohn Company recently reported no mishaps in more than 5,000 cases treated with Orinase for protracted periods. In Europe, similarly, where experiments with this compound have been in progress even longer, serious ill effects have not been observed.

Eli Lilly & Co., after considerable work with Carbutamide—also called BZ55—has withdrawn it from widespread field trials as a precautionary measure. The Lilly sulfa compound which differed in composition from Orinase, apparently was more toxic. Though it was never established that BZ55 was responsible, several fatalities occurred in the firm's large series, and non-specific myocardial, pancreatic and hepatic damage was observed postmortem. Sulfa drugs can produce similar changes in sensitive laboratory animals. These findings could, therefore, be meaningful or coincidental. The doubt that is raised bespeaks the continued need for a cautious approach.

Less obvious disadvantages may further add to our skepticism. Our present conception is that these drugs produce their effect—in part, at least —by stimulating the beta cells of the pancreas. How long can this be continued? Will it finally lead to a state of exhaustion in which the beta cells will fail to respond? Or does the drug have a harmless tonic effect? Our inability to answer these questions must again dampen our enthusiasm.

These and other doubts must be removed before we abandon the known reliability of insulin.

MY OWN EXPERIENCE

My experience with oral hypoglycemic agents began in May, 1956. Although I was besieged by patients requesting the new treatment, I refused it unless they met definite specifications:

1. I made sure they understood that the drugs were under experimental trial and would be provided to them for clinical evaluation only.

2. They had to agree to remain under constant supervision and to return for frequent examinations. In order to double check their compliance, I furnished them only a small supply of the medication each time.

3. I excluded all cases that were already well controlled by insulin, diet, weight reduction or any combination thereof. If the above measures had proved unsatisfactory, I provided chemotherapy. Such patients were, however, requested to continue their daily living and eating habits as previously, so that realistic comparisons could be obtained.

Twelve patients were so studied. At first BZ55 was used, but when it was no longer available, Orinase was substituted. The two were used interchangeably with no apparent differences in clinical responses.

The responses varied from dramatic effectiveness to complete failure. In my group, the breakdown was as follows:

1. *No response:* Three cases were refractory both to test dosage and to five-day therapy.

2. *Complicated response:* In two cases, treatment was discontinued even though hyperglycemia had been adequately controlled. One patient developed a generalized dermatitis, with itching and a macular rash after 10 days of therapy. This resolved following palliative applications and withdrawal of the drug. The other patient complained of just "not feeling well." He had no particular complaints, but he was unduly tired. Physical examination and many laboratory studies, including electrocardiogram and thyroid function, were unrevealing, but it was deemed inadvisable to continue the medication further.

3. *Satisfactory response but inadequate opportunity for supervision:* Three patients tolerated medication very well and derived considerable benefit, but all of them lived at considerable distances from Sioux City and said that they could not come to my office for examinations as frequently as I wished. Since I wasn't to be permitted opportunities for follow-up observation, I withdrew the medication.

4. *Good response:* In four cases the therapy was a real blessing and met every expectation. Two patients have been on continuous therapy since May, 1956; one since September, 1956; and one

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since February, 1957. All are older patients whose diabetes is not severe but who could not be otherwise managed. No ill effects have been observed, and control has been excellent. In all, previous hyperglycemia and its usual symptoms have been corrected. Both fasting and two-hour p.c. blood sugars have remained normal. The patients' diets are liberal and unrestricted. Their morale has been excellent. Although I started the medication as a necessary and calculated risk in the management of recalcitrant diabetics, I have long since abandoned my reluctance about giving it to these patients. It has proved a valuable adjunct.

AN ADJUNCT, NOT A SUBSTITUTE

It is important to emphasize that the oral hypoglycemic is only an additional adjunct, not a replacement for other accepted treatments. There are now two main groups of diabetics who are not satisfactorily controlled. One is the so-called "brittle diabetic"—the patient with difficult endocrine imbalances whose response to management is unpredictable. Orinase is of no value for such an individual. In fact, it is contraindicated.

The other type is the patient with brittle will power—the immature individual who will not conform to reasonable limitations. For him, Orinase will have greatest value. It permits some patients to continue happy, for it enables them to indulge their appetites without immediate or foreseeable ill effects. Just as tranquilizers cannot be thought to constitute complete psychiatric management, so these diabetic drugs cannot be considered complete diabetic care. They are only a helpful makeshift for some patients who are not amenable to more thorough care.

This approach is not feasible or necessary for the large majority of diabetics. They should continue their management as previously. Orinase has no place in their care. Further developments may broaden the scope of its usefulness. As of today, however, it is important that it should not be considered a substitute for insulin. Whereas insulin is a physiologic approach, the sulfas are still empirical!

Oral administration is the only apparent advantage. Although highly desirable for that reason, the drug may have drawbacks. The hazards of prolonged administration and the adequacy of the control it provides have not as yet been thoroughly evaluated. Furthermore, in severe cases where help is most needed, it is of no value.

Our present studies may be only a harbinger for more effective oral agents. Different sulfa compounds, as well as other groups of drugs already explored or to be considered later, may individually or collectively prove of greater value. A considerable period of time must elapse before the evaluation of the present compounds can be completed, and today we can only speculate upon their ultimate usefulness and limitations.

For the present, careful restriction of cases, according to the limitations herein described, should be continued.

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Fee Committee Issues Last Call for Suggestions

Dr. William C. Eller, chairman of the ISMS Fee Committee, has mailed notices to the secretaries of all specialty groups and the Iowa Academy of General Practice suggesting that each organization review the Iowa Relative Value Schedule and give his Committee the benefit of its deliberations.

Constructive suggestions for improvement will be most welcome. The deadline is September 15, 1957. Shortly thereafter, the Committee will begin meetings to study the possible effects of the changes that have been proposed.

One of the more important problems to be solved is the development of a satisfactory formula for use in prorating fees when two or more physicians attend a patient.

Cryptococcus Neoformans Meningoencephalitis

A Case Report

F. W. MULSOW, M.D., AND E. L. LINDLEY, M.D.

CEDAR RAPIDS

Cryptococcic infections of the central nervous system are widespread over the world, yet the number of reported cases is relatively small. The diagnosis is often very difficult, and sometimes is not made until after craniotomy or necropsy examination. In most instances, the course of the disease terminates in death after a short time, but in some cases death occurs only after a very prolonged period. It is for these reasons that this case is reported, with a brief review of the significant literature.

A recent and very thorough review of the literature on this disease has been presented by Littman and Zimmermann.[1] They believe that Verse, in 1914, was the first to report a human case of central nervous system crytococcosis correctly diagnosed before death. They also say, "The concensus among medical mycologists at present is that the most valid name, on the basis of usage and priority is Cryptococcus neoformans." They estimate that well over 300 cases have been reported up to the present time, and that many cases have not been reported in the literature but have been recorded in Vital Statistics reports.

One of the most important points in making the diagnosis in any patient presenting symptoms of headache from disease of the central nervous system is to keep this disease in mind and to make a special search for the organism. Carton and Mount,[2] in a review of 178 reported cases, found that 42 cases had been subjected to brain surgery. In only nine were tumors or granulomata found. Magarey and Denton[3] did not find the organism until necropsy in a man treated over a period of 3½ months and in whom four spinal fluid examinations had been made. They found low sugar content, high protein content and small numbers of lymphocytes, but they made no special search of the spinal fluids for this organism, one that is often mistaken for lymphocytes or red blood cells. The tubercle bacillus is most often searched for in patients with this type of disease.

CASE REPORT

A 64-year-old man who was admitted to St. Luke's Hospital, Cedar Rapids, on August 3, 1956, gave a history of first being admitted there in 1929 because of sinus headache, nausea and general abdominal distress. He had been there again in April, 1939, for influenza, bronchitis and sinusitis. Beginning on June 4, 1950, he had been in the hospital on five different occasions because of acute upper-respiratory infections, with mild fever, bronchitis and asthma.

X-ray studies revealed diverticula of the esophagus, moderate emphysema of the lungs, and multiple, small calcified areas in the lungs, liver and spleen. The histoplasmin test was negative. The Mantoux test was positive, but no tubercle bacilli were found in the sputum on any of several occasions. An allergic dermatitis had been present on the hands and feet for the past five years. On his final admission, his chief complaints were headache, pains and aching of the shoulders and back, and increasing general weakness throughout the past two months. For several months before becoming acutely ill, he had tired easily and had lost some weight.

His temperature on admission was 99.5°F., and his pulse was 100. The hemoglobin was 14.1 Gm. per cent; the red cells numbered 4,300,000; and the white cells numbered 11,500. The differential white count was 66 per cent polymorphonuclears, 32 per cent lymphocytes and 2 per cent eosinophils.

The patient's headache, which at first was no more than nagging, was relieved at times by aspirin and benzedrine inhalations. Penicillin gave him no relief. He developed nuchal rigidity after a few days, and spinal fluid examination was made to determine the nature of the disease of the brain or meninges. The spinal fluid was under 260 mm. of water pressure. The protein content was 76 mg. per cent, and the sugar content was 7 mg. per cent. The cell count was 28, with 69 per cent lymphocytes and 31 per cent polymorphonuclears. A yeast-like organism was also found in the smears, and proper cultures were made. In a few days, the Cryptococcus grew well on the plate cultures.

Another spinal fluid examination four days later revealed a few of the yeast cells, but no blood cells. A third examination of the spinal fluid a week later revealed a few yeast cells, but no blood cell. In the second examination, the sugar content was 14 mg. per cent, and there was none in the last specimen. The protein contents were 191 and 222 mg. per cent, respectively.

After the disease had been diagnosed, large doses of antibiotics were given. Chloromycetin was

given for a few days with no benefit. Then we tried mycostatin, and finally amphotericin B, but the patient died a few days later.

The gross findings at autopsy were essentially as follows: meningitis with edema and abscesses of the cerebellum, congestion, and emphysema and edema of the lungs. There were a few peribronchial calcified glands and many small calcified areas of the lungs, liver and spleen. Examination of the brain after fixation revealed multiple small gray opacities of the meninges and many small cysts from 2 to 8 mm. in diameter in the cerebellum. The yeast-like cells were found in these cysts, and cultures and stains led us to think them similar to those that had been found in the spinal fluid before the patient's death.

DISCUSSION

It is impossible to estimate the time of onset of the cerebral infection with any degree of accuracy in this case. The long history of upper-respiratory infections, sinusitis, mild headache and asthma indicates that the lungs were the most likely source of the brain infection, but careful examination at autopsy did not reveal cryptococcic infection of the lungs or other parts of the body.

From the symptoms, the diagnosis was impossible, but from the laboratory examinations it did not prove especially difficult. The assistant director of the laboratory made careful examinations of the spinal fluid, after finding the very low sugar content and the high protein content of the spinal fluid. The capsulated and budding yeast-like organism was found, cultures were made on the proper media, and the Cryptococcus grew within a few days.

Treatment with large doses of antibiotics had no apparent effect upon the progress of the disease. Perhaps too late in this case, we gave Amphotericin B, but to no avail. Beeson[4] treated a patient over a period of 16 years, during which time she did the work of a secretary and became the mother of two children. She had very few symptoms throughout most of that period. He states that caution should be exercised in accepting reports of "recovery" in patients with cryptococcic meningitis. Stevenson *et al.*[5] report three cases in which encephalitic cysts due to the action of this mycotic organism were incidental findings. They conclude that these lesions provide examples of self-limited, clinically unsuspected cases, and that "their existence widens the common concept of cryptococcosis of the central nervous system as a universally fatal meningoencephalitic process." Berk and Gerstl[6] report a case of a solitary pulmonary lesion in which lobectomy produced four-year survival. They found that five such cases had been reported. Cases of cryptococcic meningitis have been found unexpectedly in Hodgkin's disease with symptoms of brain involvement, as well as many other cases presenting symptoms of brain involvement.

CONCLUSIONS

A case of Cryptococcus meningoencephalitis has been reported, and a brief review of the literature has been presented. This disease is worldwide, and apparently occurs more often than the reports in the literature indicate. The diagnosis may not be difficult and craniotomy can be avoided if a careful examination of the spinal fluid is made in cases of central nervous system disease.

There seems to be very little reaction of the tissues to this organism, and the spinal fluid may contain very few or no leukocytes, thus leading physicians to the mistaken diagnosis of tumor in many cases. Recovery is rare, although there may be long periods of remission in this disease.

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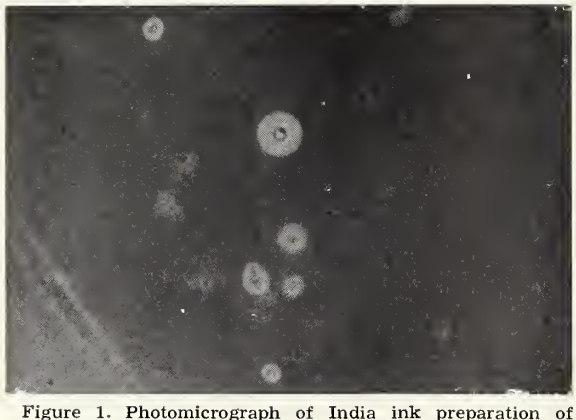


Figure 1. Photomicrograph of India ink preparation of spinal fluid illustrating budding fungus with wide capsule. By G. S. Starkey.

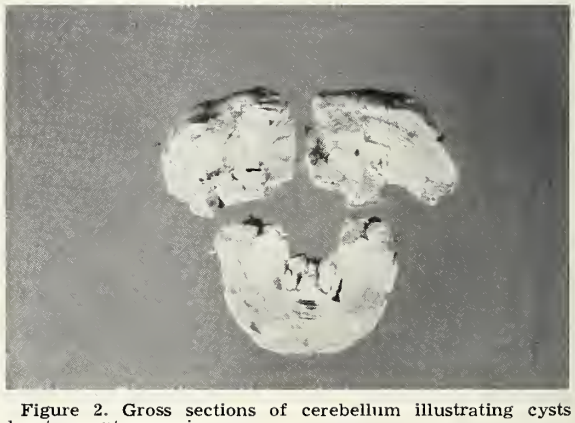


Figure 2. Gross sections of cerebellum illustrating cysts due to cryptococcosis.

Mercy Hospital, Des Moines

Clinico-Pathologic Conference

May 7, 1957

CLINICAL HISTORY

Mr. F. G., a 71-year-old white male, was admitted to Mercy Hospital on September 12, 1955. He expired on September 27, 1955.

Chief Complaint: Jaundice and abdominal discomfort of one week duration.

Present Illness: For several weeks the patient had noticed that he tired more easily than usual. About one week prior to admission, he began to experience a dull aching sensation which was intermittent and was generalized over the abdomen. Nothing he took relieved this sensation, and ingestion of food usually increased the distress. At first, there was no nausea or vomiting, but about three days before his admission, he vomited three separate times. At that time he also noted that his skin was turning yellow. The urine became dark, and some of his bowel movements were a lighter color than usual, but this latter finding was not constant. He did not recall any pruritis, nor was any present upon his admission. Since the onset of the jaundice, he had lost his appetite. There had been no intolerance to fatty or gas-producing foods. There was no known weight loss. There was no history of gallbladder disease. There had been no known contact cases of jaundice. The patient's dietary history seemed adequate, and he had never consumed more than two or three beers during a week.

Past History: The patient had had the usual childhood diseases without sequelae, and had had "rheumatism" at the age of 24. He had been in Mercy Hospital for a two-week period three years prior to this admission, at which time the discharge diagnosis was chronic bronchitis. Since that time, he had been taking digitalis, but personally knew of no heart disease.

Systemic Review: The only complaint that seemed unrelated to the present illness was occasional nocturia.

PHYSICAL EXAMINATION

The patient was a well developed, well nourished, slightly obese white male who was jaundiced, but did not appear to be in any acute distress when examined.

Skin: Generalized icterus was present, and there was a brownish rash over the right abdomen and right upper leg. There were a few spider angiomata over the chest and abdomen.

Head and Neck: The sclerae were moderately icteric. There was poor oral hygiene. No lymph nodes were palpated in the neck, and the thyroid gland was not enlarged.

Heart: The cardiac rate was regular at 68, and there were no murmurs. The blood pressure was 164/90 mm. Hg.

Lungs: The lungs were clear to percussion and auscultation.

Abdomen: This part of the examination was unsatisfactory because of the generalized muscle guarding of the entire abdomen, especially the right upper quadrant.

LABORATORY STUDIES

The hemoglobin was 15.6 Gm., or 102 per cent; the erythrocyte count was 5,700,000; the leukocyte count was 8,350; and the differential showed 71 per cent neutrophils, 27 per cent lymphocytes and 2 per cent monocytes. The sedimentation rate (Westergren) was 1 mm. per hour. Urinalysis: acid reaction; brown color; specific gravity 1.030; albumin negative; sugar 1.3 per cent; bile positive. The urine sediment showed occasional epithelial cells, 2-4 pus cells, rare finely granular casts and a few mucous threads per high power field. The VDRL and Kline flocculation tests were negative. A Van den Bergh test showed a total bilirubin of 8.5 mg. per cent, with a direct reading of 4.7 mg. per cent and an indirect of 3.8 mg. per cent. The thymol turbidity was 1.8 units. Alkaline phosphatase was 46 King-Armstrong units. Serum amylase was 42 mg. per cent. A blood sugar was 153 mg. per cent.

X-RAY STUDIES

A chest x-ray showed the heart size to be at the upper limits of normal. There were increased markings in the hilar regions fanning out toward the bases. The findings were consistent with a clinical diagnosis of early cardiac decompensation. Gastrointestinal x-rays showed marked spasticity of the stomach. The antrum and duodenal bulb were deformed, having the appearance of an acute duodenal ulcer. The possibility of malignancy was suggested, but peristalsis was noted throughout the area, and the deformity was thought to have an inflammatory basis. The duodenal loop was not widened.

CLINICAL COURSE

A Van den Bergh test five days after admission showed a total bilirubin of 21.4 mg. per cent, with a direct reading of 13.6 mg. per cent and an indirect of 7.8 mg. per cent. Bleeding time was 1½ minutes, and the coagulation time was 3½ minutes. The blood type was A positive. On the tenth hospital day, the patient was taken to surgery, where an abdominal exploration was performed.

Numerous adhesions were found in the right upper quadrant. The gallbladder, which was enlarged, was removed. The common bile duct was explored and was dilated, and a stone was removed from it. It was necessary to open the abdomen in order to explore the common bile duct adequately. A T-tube was inserted, and the common duct was closed. The liver was extremely friable, and some difficulty was encountered in controlling bleeding from the gallbladder bed. For this reason, a biopsy of the liver was not taken, although its appearance was abnormal. During surgery, the patient received two units of blood. Following surgery, the blood sugar was 213 mg. per cent. The pathologist's report on the tissue removed at surgery was: chronic cholecystitis with superimposed acute cholecystitis; cholelithiasis (mixed type stones); lymph node from region of the cystic duct showed chronic lymphadenitis.

The immediate postoperative course was satisfactory, but two days later the patient became confused and attempted to pull out the tubes. At that time the lung fields were clear to auscultation, except for some transmitted rales from the throat. The blood pressure was 140/80 mm. Hg. The pulse was 96, regular and strong. The abdomen was somewhat tender at the operative site, but it was not distended. The patient's temperature was 102°F., and attempts were made to lower it by means of ice packs. Clinitest on the urine at that time was negative. Intramuscular paraldehyde was given for restlessness. The following day, his jaundice was visibly increasing. By then the abdomen had become distended, and no bowel sounds could be heard. The patient was markedly disoriented and uncooperative, pulling out the stomach tube and resisting attempts to reinsert it. Four days postoperatively, the blood sugar was 198 mg. per cent. A Van den Bergh test showed a total bilirubin of 21.4 mg. per cent, with a direct reading of 12.7 mg. per cent and an indirect of 8.7 mg. per cent. Five days postoperatively, his condition was much worse. The abdomen was distended and tender. Icterus was increasing. The pulse was 150 but regular until 9:00 p.m. on the fifth postoperative day, when he expired.

Clinical Diagnosis: Peritonitis.

CLINICAL DISCUSSION

Dr. F. C. Coleman: As has been our custom, Dr. Drew, who is to discuss this case, was provided only with a copy of the clinical history which each staff member received with the notice of this meeting.

Dr. Edward J. Drew: When I saw the triumverate of jaundice, abdominal pain and death, I thought of the little tow-haired boy in Indiana about 100 years ago. His assignment was to read the twelfth verse in Chapter III of the Book of Daniel concerning the three Hebrew children Shadrach, Mesheck and Abednego, who were cast into the flames by the Babylonian king, Nebuchadnezzar. He mutilated the pronunciation of their names, and the teacher gave him a severe whipping. Several verses later his turn came once again, and when he saw the verse that had been assigned him, he began to scream and holler. The teacher asked the reason, and and tow-headed boy replied, "O Lord, there are those three same damn fellows again!"

In essence, we are to discuss the case of a 71-year-old Caucasian male whose entrance complaints were jaundice and abdominal discomfort of a week's duration. The patient had been experiencing tiredness and generalized abdominal aches for several weeks. The pain had been aggravated by eating, and in the three days prior to admission he had had nausea and vomiting. Jaundice, accompanied by dark urine and light stools, had also been of three days' duration. His appetite had diminished during the week prior to his admission to the hospital. It is interesting to note that there is no history of weight loss or intolerance to fatty foods. There was also no evidence of contact with any jaundiced patients. As far as one can ascertain from the protocol, his diet had been adequate, and there had never been a history of excessive consumption of alcohol.

The patient's past medical record reveals that he had been taking digitalis for three years. Therefore, some medical attendant must have felt that he had had sufficient cardiac damage to justify his being placed on that drug.

The positive findings on physicial examination were, therefore, jaundice, brown rash on the abdomen and right upper leg, spider angiomata of the chest wall and abdomen, and icterus of the sclerae. There was also generalized muscular guarding of the abdomen, particularily in the right upper quadrant.

The laboratory procedures showed that his hemoglobin was 102 per cent, and his red blood count was 5,700,000. The amount of vomiting which the patient had would not likely result in so much hemoconcentration. The sedimentation rate was normal, the urinalysis was positive for bile, and there was 1.3 per cent glucose in the urine. The Van den Bergh test on admission was 8.5, with a direct of 4.7 and an indirect of 3.8. Thymol turbidity was 1.8 units, which is esentially normal. The alkaline phosphatase was 46 King-Armstrong units. The serum amylase was 42, and the blood sugar was 153 mg.

X-ray studies of the patient's heart showed increased vascular markings compatible with early cardiac decompensation.

Five days after admission, the patient's total bilirubin had increased from 8.5 mg. per cent to 21.4 mg. per cent, with an increase of the direct bilirubin from 4.7 mg. per cent to 13.6 mg. per

cent, and an accompanying rise in the indirect from 3.8 mg. per cent to 7.8 mg. per cent.

Ten days following admission, the patient was subjected to a celiotomy, at which time a cholecystectomy and choledochostomy were performed. A diagnosis of acute cholecystitis superimposed on chronic cholecystitis, cholelithiasis and choledocholithiasis were made at the time of surgery. There were discernible abnormalities of the liver, but the profuse hemorrhage precluded a biopsy of the organ. Following surgery, the patient's immediate postoperative course was deemed satisfactory for 48 hours. After that time, however, he became confused and attempted to pull out the Levine tube. His condition progressively deteriorated, and he expired on the fifth postoperative day.

In all likelihood, this patient died from hepatic complications following surgery. The syndrome of liver death was described by Charles Heyd in 1924. It is characterized by high fever, circulatory collapse, coma, delirium and death. Heyd separated the fatal cases into three general categories. Group one consists of obese patients with long histories of biliary tract disease. These individuals have delayed recovery from anesthesia. A semicomatose state ensues, followed by carphology, coma and death in 24 to 48 hours. The second classification includes patients who are jaundiced, and there is often a history of previous biliary tract surgery. Such a patient is considered a good operative risk, although not so good as a patient in group one. The convalescence is satisfactory for the first 36 to 48 hours. The patient becomes irritable and nervous. There follows an abrupt vasomotor collapse, and death ensues within 72 to 96 hours. There is marked terminal hyperpyrexia. The third group consists of patients with calculus, cholangitis or pancreatitis. This type usually is a poor surgical risk, and considerable time is often spent in preparing these patients for surgery. They do well for five or six days postoperatively as the jaundice diminishes, and the patient is felt to be on the road to recovery. The coma usually appears suddenly, and death becomes imminent. In this group of cases, there is a renal factor, for there is first oliguria and finally anuria. In this type of case, the hyperpyrexia is not a salient feature, and the temperature does not often rise above 102°F. Many patients have constitutional or acquired liver infirmities without clinical evidence. There is more truth than fiction to the complaints voiced by many patients that "something is wrong with my liver."

In the case under discussion, it is obvious that in addition to disease of the gallbladder and common bile duct, this unfortunate individual also had certain hepatic inadequacies which brought about his death. It is therefore necessary for us to review the hepatic diseases with which he may have been afflicted.

First, this patient had an obstructive type of jaundice, part of which could have been caused by the presence of gallstones in the choledochus. One stone was removed at the time of the operation, and it has been noted that the direct Van den Bergh decreased in the postoperative period, although the total Van den Bergh remained essentially unchanged. In other words, the jaundice from hepatocellular sources increased following the operation. The jaundice could have been caused by additional stones within the choledochus which were not removed at the time of the operation. However, the direct Van den Bergh decreased following the operation, and it must be presumed that the obstructive cause of jaundice was at least partially alleviated by extrication of the stone from the duct. Diseases of the liver which might have contributed to the hepatocellular jaundice could be as follows. (We are assuming that the obstructive cause of jaundice was ameliorated by operative intervention.)

A. *Cirrhosis*: It is unusual to find cirrhosis without a concomitant ascites or some history of bleeding from the upper gastrointestinal tract. In this instance, the number of red blood cells exceeded 5,000,000, the hemoglobin was above the usual level, and the patient had no history of the consumption of alcohol. All of these factors minimize the likelihood of Laennec's cirrhosis of the liver.

B. *Acute yellow atrophy*: This is a possibility, although this disease occurs in females more often than in males, and it usually attacks women under the age of 30. There is also more of a tendency to hemorrhage with such symptoms as epistaxis, hematemesis and melena.

C. *Chronic passive congestion of the liver*: This must be considered, especially in view of the patient's having taken digitalis over a period of three years. However, there was no edema of the legs, and presumably ascites was absent.

D. *Hanot's cirrhosis*: In this type of cirrhosis, the jaundice is usually of long standing. Ascites and bleeding from the intestinal tract usually supervene, and the exitus is similar to that in alcoholic cirrhosis.

E. *Multiple abscess of the liver*: Abscesses of the liver may arise by infection through the hepatic artery, portal vein, lymphatic or common bile duct. In practice, however, infection usually reaches the liver only through the portal vein or bile duct. Cholangitis may arise from gallstone, carcinoma of the gallbladder or empyema of the gallbladder. However, the case under discussion did not run as fulminating a course as would a patient with liver abscess.

Hepatocellular jaundice may be caused by an acquired hepatocellular injury as in viral hepatitis, various infectious processes such as pneumonia, septicemia, malaria or infectious mononucleosis, or in poisoning with arsphenamine, cinchophen,

sulfanilamide, phosphorus, chloroform, alcohol, gold, antimony, TNT or carbon tetrachloride.

In practice, the commonest cause of jaundice is the unknown one. There is also a likelihood that this patient may have died of bile peritonitis.

F. *Bile peritonitis*: Much has been written on this subject, and young surgeons are frequently frightened by the spectre of bile peritonitis. Many authorities, however, feel that the danger of free bile in the peritoneal cavity has been overrated. Experimental animals have had their abdominal cavities inoculated with bile without any noteworthy effects. Whenever a cholecystectomy is done, a certain amount of bile is spilled, but nothing unusual results. We have also seen T-tubes pulled out inadvertently a day or two after operation without any resultant calamity. Therefore, I should discount the likelihood that bile peritonitis contributed to this man's exit. Assuming that the customary Penrose drain was employed in this instance, it is unlikely that extravasation of bile contributed to his demise.

In summary, we have an individual 71 years of age who had surgery for justifiable conditions: acute cholecystitis superimposed on a chronic cholecystitis, cholelithiasis and choledocholithiasis. Death occurred five days after the surgical intervention, and the immediate cause of death, in my opinion, was hepatic failure.

A careful perusal of the clinical features inevitably points to a tetralogy of skin pigmentation, diabetes mellitus, history of heart trouble of some type, and intrinsic shortcomings in the liver which prevented this individual from withstanding the insult of surgery. On two occasions, this patient had hyperglycemia. He also had glycosuria. He did not have a glucose tolerance test, but theoretically there is justification for making a diagnosis of shortcomings in his islets of Langerhans. Collectively, he had a history of heart trouble (he had taken digitalis for three years, and there was x-ray evidence of early cardiac decompensation), liver inadequacy, pancreatic shortcomings as evidenced by hyperglycemia, glycosuria and a low blood amylase, and skin pigmentation. This tetralogy points to a disease of iron metabolism which is known as hemochromatosis. This disorder is seldom identified prior to death and is of unknown etiology, occurring usually in males past middle age. In this disorder, excessive amounts of hemosiderin are found in the skin and mucous membranes. Deposits are also found in the pancreas and liver, where there is an associated fibrosis resulting in interference with liver and pancreatic function. In this case, pancreatic fibrosis accounts for an inadequate supply of insulin, as evidenced by the patient's blood sugar elevation, and the presence of glucose in his urine. It is logical to assume that the same process could have taken place simultaneously in the liver.

The unfortunate individuals afflicted with this "iron storage disease" invariably tolerate surgery very poorly. Skin pigmentation, which in this individual occurred on the abdomen and one thigh, is absent in two-thirds of the cases. The presence of any liver incompetency accompanied by diabetes is sufficient to justify a diagnosis. As Sherlock Holmes said, "If all of the possibilities have been removed, whatever survives, regardless of how improbable, should be close to the truth." Therefore, I think that in addition to acute cholecystitis, cholelithiasis and choledocholithiasis, this patient also suffered from the iron-storage disease of hemochromatosis.

DR. DREW'S DIAGNOSES

1. Hemochromatosis, with liver failure
2. Bile peritonitis??

RADIOLOGIST'S REPORT

Dr. R. E. Hines: The radiographs of the stomach area fail to reveal any significant opacities in the gallbladder or pancreatic areas. The barium-filled stomach is, as stated, irregular at the prepyloric area, and the duodenal bulb is also irregular. Some or much of this irregularity might be due to adhesions. No findings which would suggest malignancy are present in the chest or abdominal radiographs.

Dr. Coleman: Dr. Drew's diagnosis in this case is hemochromatosis with liver failure, but he considered the possibility of bile peritonitis. Do any of you have any other diagnoses which you would like to propose?

Dr. Richard Paul: Acute pancreatitis with or without disruption of the duodenal suture line.

AUTOPSY FINDINGS

Dr. Coleman: Following this man's death at 9:05 p.m., an autopsy was performed at 10:15 p.m., an hour and 10 minutes later. This was the body of a well developed, well nourished, white male, measuring 68 in. and weighing approximately 180 lbs. There was marked icterus of the skin, sclerae and mucous membranes. There was a surgical incision, partially healed, in the right upper quadrant. Two tubes protruded from the surgical incision, and the dressings covering the wound were saturated with bile-stained fluid. The abdomen was markedly distended and tympanitic.

On opening the peritoneal cavity, we noted a localized collection of bile-stained fluid in the upper right quadrant overlying the right portion of the transverse colon and partially surrounding the ascending colon. There was marked distention of the ileum and less marked distention of the jejunum. Fibrous adhesions were noted in each pleural cavity. There was approximately 75 cc. of clear, straw-colored fluid in each pleural cavity. The heart was enlarged, weighing 420 Gm. Coronary arteriosclerosis of moderate degree was observed in the right coronary artery, and there was scarring of the mitral valve such as is seen in long-



Figure 1. Photograph of gallbladder. This is a photograph of the surgical specimen. The gallbladder contains multiple mixed gallstones.

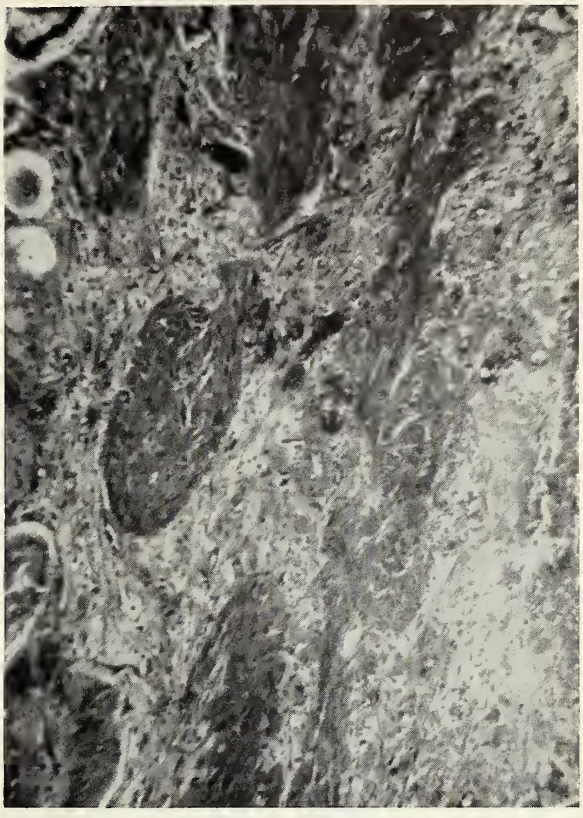


Figure 2. Photomicrograph of gallbladder. The gallbladder wall is thickened and is infiltrated with lymphocytes, plasma cells and polymorphonuclear leukocytes. The histologic appearance is that of chronic cholecystitis.

standing rheumatic heart disease. The left lung weighed 460 Gm., and the right lung weighed 640 Gm. Both were increased in weight, and bilateral pulmonary edema was present. The liver weighed 2,000 Gm., as compared with a normal of 1,500 Gm. The gallbladder bed was partially eroded, and the source of the bile-stained fluid in the upper right quadrant appeared to be in the gallbladder bed. There was a T-tube in the common duct, and there was a drainage tube protruding from the upper right quadrant through the surgical incision.

Multiple cross sections of the liver at 1 cm. intervals showed acute congestion, but otherwise the liver appeared to be normal. The pancreas weighed 150 Gm., which is within normal limits, and the pancreas was both grossly and microscopically normal in appearance. There was a large retention cyst of the left kidney, but otherwise the genitourinary tract appeared to be normal. The gastrointestinal tract, as has previously been stated, showed the small bowel to be greatly dilated, and the T-tube present in the common bile duct protruded through the ampulla of Vater into the duodenum. The bile-stained fluid located in the upper right quadrant was difficult to measure, but there were several hundred cubic centimeters of it.

Microscopic examination of the sections of organ added no other pertinent information.

A review of the surgical pathology findings showed that the lesion was predominantly one of cholecystitis with cholelithiasis.

AUTOPSY DIAGNOSES

1. Bile peritonitis
2. Paralytic ileus
3. Arteriosclerotic and rheumatic heart disease
4. Myocardial failure, with pulmonary edema and passive congestion of the viscera.

DISCUSSION

Dr. Coleman: As Dr. Drew indicated, quite a great deal has been written on the subject of bile peritonitis, and I shall call your attention briefly to two reported series of cases. Dr. Charles McLaughlin, of Omaha, Nebraska, reported that seven out of his eight cases were females, and that the age range was from 27 to 76. Three of his eight cases had a shock-like picture that came on usually within 48 hours after surgery on the biliary tract. The mortality rate of his series was 62 per cent.

He grouped the causes of bile peritonitis in four categories:

1. Those without gross perforation

a. Idiopathic leakage (i.e., leakage for which no cause could be found)

b. Microscopic perforation which could be



Figure 3. Photomicrograph of serosal surface of right side of transverse colon. The serosal surface is covered with exudate containing polymorphonuclear leukocytes and fibrin as a result of the bile peritonitis.

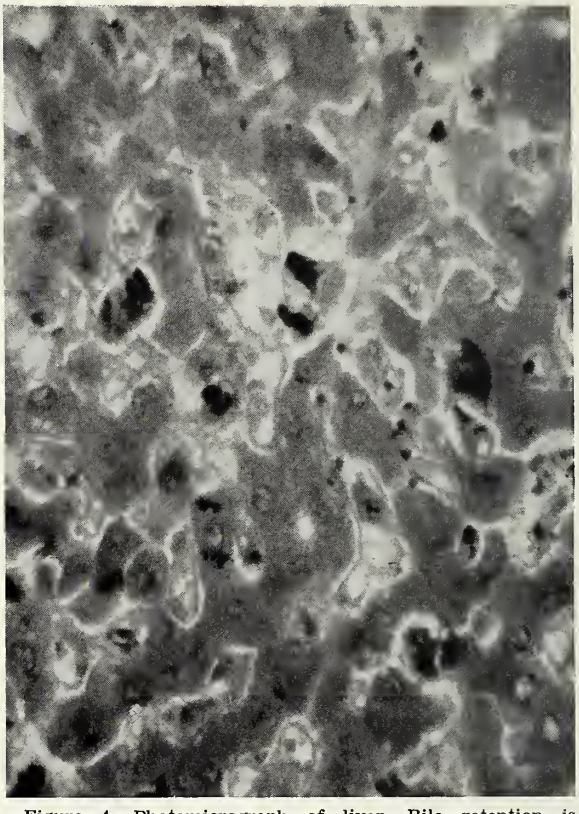


Figure 4. Photomicrograph of liver. Bile retention is present in the canaliculi and the hepatic cells.

through the gallbladder, through the bile ducts or through the intrahepatic duct with capsular rupture.

2. Those following trauma

a. Trauma to the abdomen could be complicated by rupture of the common duct, gallbladder or liver

b. Leakage from the gallbladder bed following cholecystectomy (and we believe this to be the case in the patient under discussion)

c. Absorption or slipping of the cystic duct ligature

d. Increased pressure following cholecystectomy within the common duct. (This might be associated with ruptured stump of the cystic duct, ruptured common duct, or rupture of the intrahepatic duct.)

3. Those resulting from infection, with perforation of the gallbladder, common duct or subcapsular ducts of the liver.

4. Those resulting from secondary intraductal pressure and perforation due to unusual causes such as stricture of the duct, new growths occluding the bile ducts or congenital cystic dilatation of the common duct.

The second series is that of McKenzie. In 12 of his 20 cases, the source of leakage could not be discovered. The clinical course was of two types:

1. Courses associated with sudden onset and shock, usually within 48 hours of surgery (seven out of 20 patients).

2. A subacute clinical course with insidious onset (13 patients).

The mortality rate was high in the acute cases, five out of seven patients dying of the disease. It was low among patients who had the subacute clinical course; only two out of 13 patients died.

Of the eight cases in whom the site of leakage could be demonstrated, the causes were as follows: (1) a dislodged tube in one case; (2) leakage following the removal of a T-tube on the tenth day in another; and (3) leakage through the suture line after exploration of the common bile duct in another.

Parenthetically, I might say that this series indicated that if the tube was dislodged within 48 hours after surgery, a tract had not been formed sufficiently to carry the bile to the exterior, whereas if the tube was pulled out 48 hours or more after surgery, a tract usually was sufficiently developed to carry the bile to the exterior, and the results of bile in the peritoneal cavity did not seem so serious.

Now, let me continue with the causes of leakage in the remainder of the eight cases in McKenzie's series. Leakage occurred in one instance (4) from the common bile duct following needle puncture

for cholangiogram; (5) from a slipped ligature of the cystic duct in another case; and (6) from the common bile duct through the suture line after exploration in another case. In the last two cases, (7) an accessory duct was not obliterated; and (8) unfortunately the common bile duct was severed at the time of surgery, and the accident was apparently not recognized until sometime later, although the patient did survive.

I tried to find out why these patients who had such disastrous results following the extravasation of bile into the peritoneal cavity had such a serious course, but could find nothing authoritative on the subject. Forbus states that the cause of bile peritonitis is the bile acids in the bile, namely cholic acid and desoxycholic acid, which he says are extreme irritants to the peritoneum. Although a sizable percentage of chronic cholecystitis cases are infected, infection is not necessary for the production of this lesion.

It seemed to us that bile peritonitis was the primary cause of death in this patient.

Dr. Paul: I just wondered whether or not it might possibly have been the bile peritonitis which started the ileus, and whether the disturbed physiology which is so common in ileus might not have been more of a factor in the immediate death. Functionally, it is the same as a mechanical obstruction.

Dr. Coleman: I think that is an excellent suggestion.

Dr. Drew: Did this patient have diabetes?

Dr. Coleman: He did not have diabetes as far as we know, but we do not have additional clinical laboratory studies to prove or disprove the presence of diabetes. Microscopic examination of the pancreas did not indicate diabetes, but as you know, it is possible to have diabetes without microscopic evidence of it. Thus, I have to answer that really we do not know.

Dr. Drew: What was the pigmentation on the skin of the thigh and abdomen?

Dr. Coleman: Since we did not obtain sections of the pigmented areas, I cannot tell you.

Dr. Chambers: How does the mortality of this type of peritonitis compare with that of a ruptured gallbladder?

Dr. Drew: Perforation of the gallbladder is a very rare occurrence. Dr. Nathan Womack could find only two cases in all of the hospitals in St. Louis where there was an actual hole in the gallbladder and a general disseminated leakage of bile throughout the peritoneal cavity. I know it is very seldom encountered by the average surgeon. Occasionally, you see evidence of a perforation of the gallbladder where it has been walled off by the omentum, but to see an actual hole the way you do in a perforated ulcer with disseminated bile is very rare. I think I have seen two cases.

Dr. Chambers: I was wondering whether the peritonitis that follows gallbladder rupture from more or less natural causes, such as following acute cholecystitis, is the same type of peritonitis that follows surgery.

Dr. Drew: Well, patients are usually operated upon immediately, on the theory that there is a perforated viscus of some type. This question of bile peritonitis is not very definite. For example, most of us were taught that if one opened the common duct, he should always put a T-tube in and drain it for 18 days. Now someone at the University of Tennessee, I think, takes stones out of the common duct and then closes the incision tight, and he has reported a series of 60 or 70 cases with very low morbidity. He isn't draining them. It is obvious that there is quite a bit of bile leaking out in all of those cases where the common duct is closed primarily. What people think is bile peritonitis might be something else. We cannot actually prove that bile peritonitis is as virulent as McLaughlin and some other writers would like to have us believe. Whenever a gallbladder is removed, there is a certain amount of bile leakage. That is why it is routine to use a Penrose drain. Even if there is death from bile peritonitis, you would not expect it to occur so soon as four or five days, with two drainage tubes that should have carried the bile out. It is difficult to see why that should have caused death. If you operate on a person and the fever starts going up right away, even though there is a paucity of findings at autopsy, the general clinical impression is that there was some hepatic inadequacy.

Dr. Chambers: I think that Dr. Drew's summary of the salient features given in the protocol is very good. I arrived at the same conclusion. I still think that since the patient had a high blood sugar before he was subjected to surgery, it has not been definitely determined that he died of something other than acidosis.

Dr. Coleman: That is true, Dr. Chambers. The only comment we can make about the pancreas is that the patient did not have hemochromatosis, and that there was no microscopic evidence of damage to the islets. Whether he had diabetes or not, we shall never know.

Dr. E. T. Scales: One of the facts that has not been mentioned is that a patient with diabetes who has either a ruptured gallbladder or bile in the peritoneum seems to do worse than do individuals who do not have diabetes. Therefore, we should be very cautious about patients who have diabetes and cholecystic disease so as to get them to surgery before danger arises.

Dr. Chambers: I should like to ask Dr. Drew one question. Assuming that one had made a diagnosis of hemochromatosis on a patient before surgery, would he go ahead and operate on him?

Dr. Drew: It is supposed to be very difficult to control the diabetes in hemochromatosis, but in my opinion, if the biliary symptoms are sufficient to justify surgery, there should be no hesita-

tion in operating. Perhaps a cholecystostomy might be preferable to removal of the organ if the patient's condition is precarious. Why was there a 10-day interval between this patient's admission and his operation?

Dr. Coleman: I cannot answer that question. Apparently the attending surgeon felt the patient was not ready for operation.

Dr. Drew: How do you account for the fact that the indirect Van den Bergh continued to rise from the time of admission to the time of the operation?

Dr. Coleman: I attempted to ascertain that in the descriptions of bile peritonitis in the literature. A statement is made that in an appreciable number of cases of bile peritonitis an increasing jaundice will develop after the appearance of the peritonitis, but nobody explains why.

Dr. Drew: I mean before the operation—from the time of admission to the time of the operation.

Dr. Coleman: I think it occurred because of the hepatocellular damage secondary to the obstruction—i.e., the stone—in the common bile duct.

I should like to thank Dr. Drew very much for a very informative discussion.

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State University of Iowa College of Medicine

Clinical Pathologic Conference

January 30, 1957

SUMMARY OF CLINICAL FINDINGS

A 29-year-old white man was admitted to the Ophthalmology Service with failing vision of 18 months' duration. A diagnosis of diabetes had been made 17 years earlier. He had been indifferent as regards following advice, and soon had abandoned any dietary restriction but had continued to use insulin in amounts varying somewhat with his activity and averaging 25 units of protamine zinc insulin and eight units of regular insulin daily during several months immediately preceding his admission. He had tested the urine weekly and found varying amounts of sugar. Blood glucose levels had also been measured sporadically, the last one a month before admission having been 227 mg./100 ml. He had had frequent episodes of weakness and sweating in which he required glucose for relief.

Physical examination revealed a white male 62 inches tall, weighing 120 lbs. The skin was fine textured, and the head hair was fine and somewhat sparse. The beard was normal. The heart was of normal size. There was anormal sinus rhythm, and an apical systolic murmur which also could be heard over the base of the heart and axilla, but not in the neck. All peripheral pulses were of normal contour and volume. The blood pressure was 140/100 mm. Hg.

The vision of the patient's right eye was nearly absent, and that of his left measured 6/30. In both lenses there were posterior subcapsular plaques, minimal in the left, and extensive and dense in the right. The plaque on the right obscured the examiner's view of the vitreous chamber, but an old retinal separation could be seen, together with some new vessel formation. The vitreous chamber of the left eye was clear, and the retina contained exudates, new vessel formation and flame-shaped hemorrhages. The retinal veins were dilated and sausage-shaped, and there were many capillary aneurysms. Intraocular tension was normal bilaterally.

The abdominal, genital, rectal and neurologic examinations revealed no abnormality.

The hemoglobin was 12.5 Gm./100 ml.; the red blood count was 4,000,000 per cubic millimeter; the white blod cell count was 12,000/cu. mm., with a normal differential count; and in the urine there were albumin, glycosuria and an occasional hyaline cast per low-power field.

Several special laboratory tests were done to guide subsequent therapy. Blood urea nitrogen was 22.0 mg., and creatinine was 2.0 mg./100 ml. The concentration dilution test showed urinary specific gravities from 1.017 to 1.000. Effective renal plasma flow was 556 ml. per minute. The glomerular filtration rate was 76 ml. per minute for each 1.73 square meters of body surface. The filtration fraction was 13 per cent. Phenosulphophthalein was 66 per cent excreted in two hours. Serum proteins were 4.8 Gm./100 ml., with albumin 3.1 and globulin 1.7. The serum sodium was 151, the serum potassium was 6.6, the serum chloride was 106, and the CO_2 was 27 mEq./L. Urinary 17-ketosteroids were 18.9 mg. per 24 hours, and the ratio of 17-ketosteroids to creatinine was 17.2. The basal metabolic rate was +65. The electrocardiogram was normal, and the intravenous urograms were interpreted as normal.

Hypophysectomy was done. During the opera-

tion, sharp elevations of the blood pressure to 280/120 mm. Hg. occurred, followed by rapid falls to 60/0 mm. Hg. After about an hour, the pressure stabilized at 120/70 mm. Hg.

Postoperatively, the patient received 200 mg. of cortisone daily for two days, then 100 mg. for four days, and then 50 mg. daily. He was maintained with intravenous glucose solution and electrolytes. The water and electrolyte balance was followed carefully. Normal values for serum sodium, potassium and chloride were maintained. The CO_2 content of the blood was 14.5 mEq./L. on the third postoperative day, but was in the normal range at other times.

Insulin was given in small, frequent doses. Glycosuria was noticed on hourly analyses, and acetone was present in sufficient amount to give a strongly positive test on the third postoperative day for a period of four hours. The remainder of the time, acetone was detectable in trace amounts. The body temperature varied between 103.5 and 102°F. during the first 48 hours following surgery, and then became normal. Excessive diuresis developed on the third postoperative day, and small doses of aqueous pitressin were administered. On the fourth postoperative day the patient took a liquid diet, and on the fifth day, solids. On the seventh day, the blood pressure rose to 240/130 mm. Hg., and there was slight nausea. Pitressin was discontinued, and the blood pressure fell gradually to 160/100 mm. Hg. That night, the patient rested well, and the next morning be seemed quite normal. The morning specimen of urine contained 4+ sugar and a trace of acetone. The blood sugar was 420 mg./100 ml. While sitting in a chair eating his breakfast, he suddenly expired.

CLINICAL DISCUSSION

Dr. Robert C. Hardin, Internal Medicine: There are people in this room who are aware that I saw the patient while he was alive and that I followed his case rather closely. Indeed, I know the autopsy findings. So I may as well confess in advance that I am better informed than is usual for the discussant at a clinical pathologic conference.

The case, I think, was selected by the Committee, not as a "who done it," but as a starting point for a discussion of some of the problems of diabetes. This man, as you can see from the protocol, was 29 years of age and was admitted to the Ophthalmology Service because of failing vision of 18 months' duration. The onset of his disease, 17 years earlier, had occurred during an infection of some sort, as is usual for a child of 12. He had never followed any regular regimen for the care of diabetes, and he had not been especially careful about checking his urine or seeing a physician frequently. Therefore, we know very little about his control except what we can infer from the fact that he was obviously a diabetic dwarf, probably as a result of his failure to get good nutrition during his growing stage. The evidence consisted of his being no more than 5' 2" tall, and his having a fine, thin skin, sparse hair, etc. His heart was not enlarged, but here was a systolic murmur that was best heard at the apex but was loud enough to be heard all over the precordium. It was transmitted into the axilla, but not into the neck. His blood pressure was 140/100 mm. Hg., which is definitely elevated for a man of 29.

Ocular findings were the most striking features of the examination. There was little vision in his right eye. He could distinguish light from dark, and if the examiner's fingers were held close, he could count them. Likewise, the vision in his left eye wasn't very good—6/30. There were cataracts bilaterally, the one on the right being larger, more dense and generally worse than the one on the left. Indeed the one on the right was dense enough so that it obscured the examiner's vision into the eye, though around the edges one could see some of the retina. An old retinal separation was visible. In that part of the retina which was still attached, there was new vessel formation. In other words, the patient had proliferative diabetic retinopathy. In the other eye, the retina was the site of microaneurysms, new vessel formation, exudates and flame-shaped hemorrhages.

The rest of the examination was essentially negative. The laboratory findings included a mild anemia, a white count of 12,000 and albuminuria. It is important that a few casts were found in each low-power field in the uncentrifuged urine. At that point, many special laboratory tests were performed for a specific purpose that I'll discuss later. The patient had a BUN of 22.0 and a creatinine of 2.0—both essentially normal. Several special renal function tests are listed which, in toto, show diminution of renal function. The effective renal plasma flow was low, the glomerular filtration rate was also about 15 to 20 per cent below normal, and the filtration fraction was 13 per cent. Normal is between 18 and 21 per cent. The serum proteins, surprisingly enough, were just under the lower limits of normal, being 4.8 Gm./100 ml. There was no reversal of the A/G ratio, such as is often seen in Kimmelstiel-Wilson disease. The urinary 17-ketosteroids were somewhat elevated, but just what may have been the significance of that finding, I'm not certain.

The electrocardiogram was normal, and I'd like to note that fact in passing, for it had some significance in the light of subsequent events. Intravenous pyelograms were reported as being entirely normal.

The next sentence in the protocol doesn't follow. It says that hypophysectomy was done. The rationale for doing a hypophysectomy rests on a long series of clinical observations and, perhaps, on the hope that something can be done for people who find themselves in this situation. Throughout the diabetic literature of the last 10 or 15

years, there have been reports of cases here and there exemplifying the Houssay phenomenon in the human being. Houssay, if you will recall, produced diabetes in animals by removing the pancreas and then demonstrated amelioration of that diabetes through the removal of the pituitary. A similar sequence sometimes occurs naturally in patients who first develop diabetes and then, somehow or other, lose the function of the pituitary. Ten years ago I counted four such patients who had been described in the literature, and I think there have been several more since that time. As might have been expected, one such diabetic ran a rather long course, during which she developed diabetic retinopathy. This diabetic, a lady, had had three pregnancies before her case was reported in the literature. The first two ended in miscarriage, and the third ended almost at term in stillbirth. Subsequent to delivery, she had a massive hemorrhage and infarction of the pituitary. In the five years after developing Sheehan's syndrome, she had a disappearance of microaneurysms and exudates from her eyeground, and experienced a marked improvement in vision. She had all the other manifestations of the Houssay phenomenon. She was the first patient to develop the Houssay phenomenon spontaneously after contracting diabetic retinopathy. Her retinopathy improved markedly—a reversal hitherto unknown in diabetics. There had been several attempts to lessen the severity of diabetes by the surgical removal of the pituitary. These had been rather sporadic, but they had been reported in the literature. Following the report of this woman's case, in 1952, there of course was renewed interest in removing either the adrenal glands or the pituitary as a means of treating rapidly advancing retinopathy.

Patients with this kind of retinopathy commonly have kidney lesions. In fact, many think that the two lesions are rarely, if ever, encountered separately. Thus there was considerable doubt about whether this operation, which might help vision, might possibly result in further damage to the patient's kidneys. The first patients operated upon had full-blown retinopathy and clinically diagnosable Kimmelstiel-Wilson disease. One of the best series published so far consists of 20 patients who, at the time of the report in 1955, had been followed for lengths of time ranging from three to 43 months after hypophysectomy. Seven of these 20 had died during the first 19 months after the operation, and the others, who were still living at the time of the report, had shown improvement in their renal circulation, as evidenced by special tests, but had not shown much improvement in kidney function. Yet, they had no further deterioration of kidney function. Their blood pressures had fallen, their retinopathy had improved remarkably and their vision had also improved. Several other series have been reported, but none of the patients has been followed long enough, I think, to be of any great significance.

It is now much easier, I might say, to keep patients alive after hypophysectomy than it was before cortico steroids became available. All authors end their reports with a hopeful note, but the truth of the matter is, I think, that we don't yet have enough data on which to decide whether or not this operation is truly useful. For that reason, we regard it as being purely experimental, and we have undertaken so to treat a small group of these patients. We choose no patient for the operation unless he has a hopelessly progressive type of retinopathy, such as this man had, and unless the patient fully realizes the risks of the operation after we have explained them to him. He must be aware that he will have to walk a metabolic and endocrine tight-rope after the operation, for, of course, when the pituitary has been removed he will have no adrenal, thyroid, or ovarian or testicular function. The patient requires extensive substitution therapy. In addition, if the posterior pituitary is destroyed, diabetes insipidus will develop.

We have operated upon two patients so far, and of them this was the first. The other is alive after three months. We are utilizing a shotgun sort of remedy, I think. One point that I hoped would come out of today's discussion is that there are two kinds, or types, of vascular lesions in diabetics. The first is one that we are very familiar with in other patients—atherosclerosis, arteriosclerosis and medial calcification, which occur in the aging process and are no different in the diabetic except in that they occur earlier and progress faster. The other lesion, the one that we are attacking by hypophysectomy, is apparently peculiar to diabetes. It is a capillary lesion that occurs, so far as we know, in the retina and in the glomerulus of the kidney. In the eye, it produces diabetic retinopathy, and in the kidney, Kimmelstiel-Wilson disease. There is some evidence that all of the capillary beds in the body are involved in this process. The most clear-cut evidence perhaps is that it occurs in the vessels of the conjunctiva. Whether these two types of lesion are due to the same process or are related in any other way is, I think, unknown. One question still unanswered has to do with the mechanism of the production of degenerative lesions in diabetes. We know the degenerations occur roughly 13 years after the onset of diabetes. Arteriosclerosis is found in the usual places—heart, kidneys, legs and brain. The lesions occur in those diabetics who have not been well controlled. Although these lesions occur in poorly controlled diabetics, there is no proof that they occur because the control has been poor. The true relationship between control and the development of degenerative lesions will remain unknown until we discover how the lesions develop.

Recently, we have heard a great deal from those who are studying the metabolism of fat in individuals with and without atherosclerosis. A great deal of work has been done in the comparing of different populations throughout the world as to fat content of their respective diets and their records as regards the incidence of atherosclerosis and coronary artery disease. Roughly, it can be said that diets high in fats and cholesterol are found in those populations that have high incidences of atherosclerosis and coronary arteriosclerosis. Though that parallelism is not really a proof, it indicates a trend, and there are some supporting pieces of evidence. Lipoprotiens of high molecular size, classified as Sf 12-20, have been shown to be present in high concentrations in people who have atherosclerosis and coronary artery disease. Some workers state that one can predict the probability of an individual's contracting coronary occlusion on the basis of the concentration of Sf 12-20 lipoproteins in his blood stream.

In diabetics, we find that there is some degree of correlation between the levels of cholesterol and Sf 12-20 lipoproteins and the presence of peripheral vascular disease. It is not nearly so good a correlation as one finds between elevated lipids and the occurrence of cataracts, and is far less pronounced than the correlation between elevated lipids and retinopathy. The multiple relationships may become confusing unless one remembers that the mathematical demonstration of a correlation does not necessarily establish a direct cause-effect relationship. The phenomena we are correlating may be effects of the same cause, and that cause is as yet unknown.

What I have been saying may seem a long way removed from the discussion of hypophysectomy, and perhaps we should return to that subject. There is evidence that abnormalities leading to hyperfunction of the adrenals promote the formation of capillary aneurysms in the retina. Since the pituitary controls adrenal function, it seems logical to remove the pituitary to stop adrenal hyperfunction. There is another possible reason for hypophysectomy—to eradicate the source of anterior pituitary hormone, with its diabetogenic effect. This combination of elimination of both adrenal and pituitary factors has been advanced as the explanation for the improvement of these patients.

This patient was the first whom we treated in this fashion, and he presented us with a new problem so far as substitution therapy after surgery is concerned. During the operation, this patient had a sharply fluctuating blood pressure, for which we could assign no cause. It fluctuated rapidly between 280/120 and 100/60 mm. Hg., but returned to normal about an hour afterward. Postoperatively, we gave him 200 mg. of cortisone a day for two days, then reduced the dose to 100 mg. for four days and then to 50 mg. daily. He was maintained with intravenous glucose and electrolytes. We followed his water and electrolyte balance by means of intake and output charts, and repeatedly examined the serum for sodium, potassium, chlorides and CO_2. In the expectation that he would be insulin sensitive following the operation, we gave him only small doses.

The findings were normal at all times, except for short period in which he had a CO_2 content of 14.5 mEq. At the same time, he had a moderately large amount of acetone in the urine and was, in fact, in diabetic acidosis, for out of respect for his presumed insulin sensitivity, we had given him less insulin than he needed. We learned subsequently that as long as the patient receives enough cortisone, he is not particularly sensitive to insulin.

The patient got along quite well, except that on the third postoperative day he developed diabetes insipidius. We treated him with aqueous posterior pituitary extract, but he became hypertensive, and because we thought the fault might lie in the treatment we were giving him, we discontinued it. His blood pressure fell rapidly, and he felt quite well. Yet, he was markedly polyuric, and we intended to try pitressin in oil in the hope of avoiding hypertension. The next morning he was still feeling quite well. He got up to eat his breakfast, and while sitting in his chair, he suddenly expired.

Sudden death in this patient had to be explained either as resulting from hypoglycemia or from a thrombosis in a coronary artery. Since the blood sugar at that point was found to be 420 mg. in 1,100 ml., he apparently was not in hypoglycemia. Our clinical diagnosis was coronary thrombosis.

I have been asked whether one or two microaneurysms constitute retinopathy, and if so, whether there is also kidney disease. The answer to the first question is, "Yes." Retinopathy is present, even though the microaneurysms may recede and not be seen again. That is the essential lesion of retinopathy as the ophthalmologists describe it. I am perfectly safe regardless of how I choose to answer the second question, for it cannot be proved whether or not there are any capillary lesions in the glomeruli. But I think that what evidence we have points to the likelihood that there are some, though there will be no clinically evident kidney disease.

Dr. John Carter, Pathology: The patient did have very severe coronary atherosclerosis. It was confined almost exclusively to the coronary arterial system. It was minimal elsewhere, including the great vessels and the vessels of the brain. Such a striking variation in the distribution of the arteriosclerotic lesions has been observed previously. One centimeter distal to the ostium of the left anterior descending branch of the coronary system was an atheromatous occlusion estimated to be 98 per cent complete. There was barely a pinpoint opening discernible in this area. The

atheromatous plaque was soft and pultaceous, but gross evidence of thrombosis was not obvious.

Before going further, it might be well for me to mention that the pituitary gland removed at surgery was normal in all respects. This finding is perhaps noteworthy, since in approximately 25 per cent of diabetics—particularly in long-standing cases—the pituitary gland shows a decrease in eosinophilic cells and some hydropic degeneration of the basophilic cells. Such was not the case in this instance.

There was moderately sever intercapillary glomerulosclerosis of the nodular type. Fibrosis and atrophy of the pancreas were present; the pancreas weighed only 40 Gm., whereas normally the organ weighs over 100 Gm. Atrophy of the pancreas may occur in diabetes, but it does not take place in the majority of cases. There was, however, virtually complete degranulation of the beta cells. There was rather striking atrophy of the adrenal glands, and incidentally, we found a very tiny oligodendroglioma in the subependymal plate region of the fourth ventrical.

It is perhaps of interest that on the day following the postmortem examination of the case presently under discussion, a similar patient was studied at autopsy. He was 40 years of age and had had diabetes since the age of 17. He also had severe atherosclerosis with coronary occlusion, and had intercapillary glomerulosclerosis with atrophy of the adrenal glands.

As Dr. Hardin has mentioned, qualitatively the atherosclerosis observed in diabetes is not different from that seen in non-diabetics. It is true, however, that for long periods of time the atheromatous changes are more prominent than is calcification. From our photomicrographs it was apparent that lipid-filled macrophages had coalesced and were particularly conspicuous in the atheromatous areas. Ultimately, these break down to form so-called fat or lipid cysts. In addition, there is hyalinization of the fibrous tissue so that a plaque is formed. Subsequently, of course, calcification does occur, but in this case there was no evidence of it.

As regards kidney damage, the nodular form of intercapillary glomerulosclerosis was particularly prominent. From a purely descriptive point of view, two forms are generally recognized: the nodular, characterized by ball-like masses of hyalinized material, and the diffuse, in which hyalinization of the basement membrane is particularly conspicuous. The second form, the diffuse, was not a conspiculus feature of this case, nor were any discrete capillary aneurysms demonstrated. The tubules were atrophic; arterioles were greatly hyalinized; and there was a very striking thickening of the basement membranes of the tubules. Similar hyalinization of the basement membrane of Bowman's capsule was conspicuous.

It is generally agreed that the nodular form of intercapillary glomerulosclerosis is virtually pathognomonic of diabetes. There is some difference of opinion as to the composition of the hyalinized nodules. There are those who feel that the material is precipitated protein and fibrin thrombi within the capillaries, so that in essence the process is one of intra- rather than intercapillary glomerulosclerosis. There are others who are of the opinion that the material is basically a mucopolysaccharide or lipoprotein material. It is felt by some people that prior to the occlusion of the capillaries by either lipoprotein, protein or mucopolysaccharide, microaneurysm formation occurs. In other words, the thrombotic material—whatever its basic nature—is secondary to microaneurysm formation and becomes adherent to the endothelial lining.

In the slides that we made of the pancreas, the aldehydefuchsin stain revealed that in contrast with the normal control, beta granules were virtually absent. It is of interest that in young people, the correlation between diabetes and the presence of these beta granules in very high. In the older age group, however, one frequently does find some granules, and as a matter of fact, in elderly diabetics beta granules are not uncommonly seen. It is the general impression that the defect in elderly diabetics to some extent is the result of poor utilization of insulin rather than a deficiency in the production of it. It is important also to call attention to the fact that until recently it had been the consensus that insulin either was produced by the beta granules or at least was stored in them. Recently, however, some doubt has been thrown upon this hypothesis in that certain staining characteristics and solubility studies have failed to substantiate it. In any event, there is little doubt that the beta granules have *something* to do either with the production or with the storage of insulin, although the relationship may not be so close as once was thought.

With respect to the adrenal glands, one can observe the atrophy as well as a decided decrease in the amount of lipid material in the glomerulosa zone.

From the sections of the subependymal plate region of the fourth ventricle, one could see the collection of oligocytes. The histologic pattern was that of an early oligodendroglioma. One could not exclude, however, the possibility of the lesion's being basically a hamartoma. The incipient cystic degeneration which could be observed in several areas argued in favor of the former diagnosis.

Dr. Hardin has asked me to say a word or two about the causes of death in diabetes. Statistics, though they are often boring, are quite significant in diabetes, and those which I shall quote have been taken, for the most part, from an excellent article published by Bell in 1952.* His study has to do with a statistical postmortem evaluation of

* Bell, E. T.: Postmortem study of vascular disease in diabetics. AMA Arch. Path., 53:444-455, (May) 1952.

vascular disease in diabetics. There was a total of 1,559 autopsies done between 1945 and 1954 on diabetics. During that length of time, 6.7 per cent of the diabetic patients died from acidosis and coma. Another 12.3 per cent died from a variety of infections, the commonest being staphylococcic. There is little doubt that there is a decreasing incidence of deaths from those causes, and an increasing incidence of deaths from vascular disease. In this particular group, again, 54.2 per cent of the deaths resulted from vascular disease of one type or another.

In breaking these figures down further, it was found that none of the diabetics under the age of 20 years had died from vascular disease. In the 30-40 year age group, 23 per cent of the deaths were due to vascular disease, and the overwhelming majority of them were the result of arteriolonephrosclerosis or intercapillary glomerulosclerosis. In the 50-60 year old group, 46 per cent died of vascular disease, and in those over 60 years of age, 57 per cent.

In breaking these figures down still further, particularly as regards frequency of various types of vascular disease, Bell and his associates found that first place was taken by coronary occlusion on the basis of atherosclerosis similar to that which we have talked about today. In persons 40 years of age and over, there is a 40 per cent greater incidence of death due to coronary arterial disease in diabetics than in non-diabetics. The same is true for gangrene. The next commonest form of arteriosclerosis is arteriolonephrosclerosis. Thus, coronary arterial disease, gangrene and renal arteriosclerosis account for the majority of deaths due to vascular disease. There are others, however. For example, encephalomalacia in the 50-60 year old group is two-times greater in diabetics than in non-diabetics. Myocardial failure, in most instances, is the third step in a sequence, the first two parts of which are renal intercapillary glomerulosclerosis and hypertrophy, and it is 30 times more frequent in diabetics than in non-diabetics. Lastly, intracerebral hemorrhage and atherosclerotic aneurysms are commoner in diabetics than in the general population.

The figures on non-diabetics are equally interesting. There were no vascular deaths in non-diabetics under the age of 20 years. In the 30-40 year group, vascular deaths were four times less frequent in non-diabetics. In the 50-60 year group, they were two times less frequent than in diabetics. Over 60 years of age, no more than three non-diabetic patients died from vascular accidents for every 10 diabetics who died from that cause. In essence, these figures add up to the statement that Dr. Hardin has already made, that diabetes very definitely accelerates atherosclerosis.

Student: Dr. Hardin, how much does it cost such a patient to buy all of the hormones that he needs?

Dr. Hardin: Before this man had his hypophysectomy, he was spending roughly $13 per month for insulin. Afterward, with his reduced amount of insulin but with all of the other hormones he required, the bill would be $21.75. The expense factor worried me, too.

Dr. Raymond F. Sheets, Internal Medicine: Dr. Carter, do you think that the lump of material in the coronary artery killed the patient?

Dr. Carter: Yes.

Dr. Sheets: Did it come up suddenly, or had it been there a day or two earlier, when the blood pressure was jumping up and down?

Dr. Carter: Perhaps I should remind you that I have spoken of two similar cases. The second patient whom I mentioned had a large myocardial infarct and died in congestive heart failure. The patient whom all of us have been discussing today had a strikingly similar coronary occlusion. The coronary artery had a lumen that could barely be recognized. The small pinpoint red dot in the center of the occluded vessel presumably was thrombotic material, but we have no sections through that area, because of technical difficulties. It would appear that a tiny thrombus was superimposed upon the large atherosclerotic lesion and accounted for the patient's sudden death.

Staff Man: Would you say that the majority of people who die from myocardial infarction have a lesion not necessarily different from that of a patient who had a myocardial infarction after being hit by a truck? In other words, on the basis of the lesion as you see it, can you explain the fact that a patient died on Thursday, rather than on Wednesday, Tuesday or Saturday?

Dr. Carter: By no means! I want to make it clear that actually the type of atherosclerotic change that we see in this case is no different from that which we see in non-diabetics. The changes occur earlier in diabetics, but there are non-diabetics in the 20-25 year age group who can have this lesion. The one thing that I wanted particularly to point out however, was that there wasn't any calcification in either of the two coronary-artery lesions that I have discussed today. Calcification usually occurs at a somewhat later age.

Staff Man: Do you think the adrenal atrophy was caused by the administration of cortisone for only seven days?

Dr. Carter: I am not certain. I rather doubt, however, that it was caused by the hypophysectomy. How fast the adrenal can become atrophic varies considerably, at least in experiments. It has been shown that with the decrease in the amount of lipid which can occur in a matter of a few days, the size of the glands may be reduced. In this particular case, however, it was my impression that the degree of atrophy exceeded what could be accounted for by the decrease in the amount of lipid. In fact, there was very severe atrophy of the adrenal glands. Putting it another

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way, I could say that there was more atrophy than one ordinarily sees in individuals treated with cortisone over relatively long periods of time.

Staff Man: I'd like to ask why we dignify this condition with the name *Kimmelstiel-Wilson's disease*, when it seems to be no more than the end product or the result of complications of uncontrolled diabetes. Is it really a disease?

Dr. Hardin: Like other things in Medicine, it got its name from the individuals who first described it. I use *Kimmelstiel-Wilson disease* because it is easier to say than *intercapillary glomerulosclerosis.*

Dr. Raymond G. Bunge, Urology: Can it occur in non-diabetics?

Dr. Hardin: That may be a leading question, since it comes from a urologist. I don't think it has been described in non-diabetics. Do you?

SUMMARY OF NECROPSY FINDINGS

Severe atherosclerosis of the coronary arteries with segmental occlusion of the left anterior descending branch was considered to have been the immediate cause of death. The prinicipal atheromatous lesion was soft, yellow and without calcium, and it was located 1.0 cm. from the ostium. There was no superimposed thrombosis, infection or infarction. All other great vessels and cerebral vessels were remarkably free from atherosclerotic changes. Both lungs showed extensive collapse.

The pancreas was very atrophic, weighing less than 40 Gm. Diffuse interstitial fibrosis, degranulation of beta cells of the islets, and occasional hyalinized islets were the other principal changes. Atrophy of the adrenal glands, with decrease of lipid content, was observed. The thyroid gland, except for minimal fibrosis, was normal.

The kidneys showed moderate intercapillary glomerulosclerosis. Many of the glomeruli revealed ball-like masses of hyalinized tissue, with hyalinization of Bowman's capsule. Tubular degeneration and interstitial fibrosis were conspicuous. The arterioles showed intimal thickening and hyalinization.

An incidental finding was a microscopic focus of immature oligocytes in the subependymal plate region of the fourth ventricle. This was interpreted as an early oligodendroglioma or hamartiosis. Megakarocytes were strikingly increased in the bone marrow.

The surgically extirpated pituitary gland (S-56-5418) was normal.

NECROPSY DIAGNOSES

1. Postoperative hypophysectomy for diabetes mellitus
2. Coronary atherosclerosis, severe, with atherosclerotic occlusion of the anterior descending branch of the left coronary artery
3. Intercapillary glomerulosclerosis, kidneys
4. Atrophy and fibrosis of pancreas, with degranulation of beta cells
5. Atrophy of adrenal glands
6. Probable early oligodendroglioma, fourth ventricle.

Coming Meetings

In State

Sept. 11-12	**Pediatric Course.** SUI, Iowa City
Sept. 18	**Sixth Annual Fall Program, Page County Medical Society.** Country Club, Clarinda
Sept. 22-24	**Annual Meeting of the Iowa Association of General Practitioners.** Savery Hotel, Des Moines
Sept. 27-28	**Fall Meeting, Iowa Urological Society.** SUI, Iowa City
Oct. 3-5	**Midwest Cardiac Clinic.** SUI, Iowa City
Oct. 25-26	**Radiology.** SUI, Iowa City
Oct. 26-27	**Annual Meeting, Iowa-Nebraska Neuropsychiatric Society.** SUI, Iowa City

Out of State

Sept. 1-7	**International Congress of Psychiatry.** Zurich, Switzerland
Sept. 5-7	**Utah State Medical Association 62nd Annual Scientific Program.** Hotel Utah and University of Utah, Salt Lake City
Sept. 5-7	**American Association of Obstetrics and Gynecology.** The Homestead, Hot Springs, Virginia
Sept. 6-12	**International Symposium on Medicine and Social Hygiene.** Trieste, Italy
Sept. 7	**Symposium, Santa Barbara County Heart Assn.** Santa Maria, Calif.
Sept. 8-12	**Twenty-second Annual Congress International College of Surgeons.** Palmer House, Chicago
Sept. 8-13	**American Congress of Physical Medicine and Rehabilitation.** Statler Hotel, Los Angeles
Sept. 9	**Treatment of Varicose Veins.** Cook County Graduate School of Medicine, Chicago
Sept. 9-11	**Prevention and Management of Athletic Injuries.** University of Colorado Medical Center, Denver
Sept. 9-13	**Hematology.** Cook County Graduate School of Medicine, Chicago
Sept. 9-13	**Radiation for Industrial Physicians and Lawyers.** University of Cincinnati, Cincinnati
Sept. 9-13	**Vaginal Approach to Pelvic Surgery.** Cook County Graduate School of Medicine, Chicago
Sept. 9-13	**Regional Anesthesia.** N.Y.U., N.Y.C.
Sept. 9-20	**Gastroscopy and Gastroenterology.** Cook County Graduate School of Medicine, Chicago
Sept. 9-20	**International Conference on Radio-Isotopes in Scientific Research.** Paris, France
Sept. 9-21	**Didactic Lectures in General Surgery.** N.Y.U., N.Y.C.
Sept. 11-14	**Fall Symposium in Obstetrics & Gynecology.** U. of California, San Francisco
Sept. 12	**Psychiatry and Neurology.** U. of Nebraska Coll. of Med., Omaha
Sept. 12-14	**Annual Postgraduate Assembly.** St. John's Hospital, Santa Monica
Sept. 13-14	**International Congress of the International Union of the Medical Press.** London, England
Sept. 14-17	**New Hampshire and Vermont State Medical Societies.** The Balsams, Dixville Notch, New Hampshire
Sept. 15-18	**Washington State Medical Association Annual Meeting.** Olympic Hotel, Seattle
Sept. 15-20	**Medical Society of Pennsylvania.** Penn-Sheraton Hotel, Pittsburgh
Sept. 16-20	**Surgery of Colon & Rectum.** Cook County Graduate School of Medicine, Chicago
Sept. 16-20	**Histology of the Skin.** N.Y.U., N.Y.C.
Sept. 16-20	**Ocular Expressions of Systemic Disease.** N.Y.U., N.Y.C.
Sept. 16-21	**Congress of International Society of Orthopedic Surgery and Traumatology.** Barcelona, Spain

Sept. 16-21	**Congress of International Union of Railway Medical Services.** Paris, France
Sept. 16-21	**Internal Medicine.** University of California, San Francisco
Sept. 16-27	**Diagnostic X-Ray.** Cook County Graduate School of Medicine, Chicago
Sept. 16-27	**Surgical Technic.** Cook County Graduate School of Medicine, Chicago
Sept. 16-27	**Office and Operative Gynecology.** Cook County Graduate School of Medicine, Chicago
Sept. 16-27	**Pathologic Physiology of Internal Medicine.** N.Y.U., N.Y.C.
Sept. 16-Oct. 25	**Anatomy of Head, Neck and Thorax for Otolaryngologists.** N.Y.U., N.Y.C.
Sept. 16-Nov. 8	**Occupational Medicine.** New York University, New York City
Sept. 17-19	**Kentucky State Medical Assn.** Columbia Auditorium, Louisville
Sept. 18-19	**Eleventh Annual Postgraduate Assembly.** San Diego County General Hospital, San Diego
Sept. 19-21	**Postgraduate Conference on Office Dermatology.** Stanford U. School of Medicine, San Francisco
Sept. 23-25	**Peripheral Vasular Disease.** Mayo Clinic, Rochester, Minn.
Sept. 23-Oct. 4	**General Review Course.** Cook County Graduate School of Medicine, Chicago
Sept. 23-Oct. 4	**General Surgery.** Cook County Graduate School of Medicine, Chicago
Sept. 23-Oct. 4	**Intensive Review of Internal Medicine.** Research Building, University of Southern California, Los Angeles
Sept. 24-26	**Pediatrics for Specialists.** University of Minneapolis Center for Continuation Study, Minnesota
Sept. 24-27	**Colorado State Medical Society Annual Session.** Shirley-Savoy Hotel, Denver
Sept. 25-27	**Annual Meeting of the Michigan State Medical Society.** Civic Auditorium and Hotel Pantlind, Grand Rapids
Sept. 25-27	**Mississippi Valley Medical Society.** Hotel Sheraton-Jefferson, St. Louis
Sept. 25-28	**Annual Meeting of the Nevada State Medical Association.** Las Vegas
Sept. 26-27	**Glaucoma.** University of California, San Francisco
Sept. 26-28	**Neuro-otolaryngology.** N.Y.U., N.Y.C.
Sept. 27	**Symposium on Sexual Problems.** Statler Hotel, Los Angeles
Sept. 27-28	**American Medical Writers' Association.** Sheraton-Jefferson Hotel, St. Louis
Sept. 29	**American College of Hospital Administrators.** Convention Hall, Atlantic City
Sept. 29-Oct. 4	**American Society of Clinical Pathologists.** Roosevelt Hotel, New Orleans
Sept. 29-Oct. 5	**World Medical Association.** Istanbul, Turkey
Sept. 29-Oct. 5	**International Congress of Military Medicine & Pharmacy.** Belgrade and Opatija, Jugoslavia
Sept. 30-Oct. 2	**Practical Course in Electrocardiography.** U. of Nebraska College of Medicine, Omaha
Sept. 30-Oct. 3	**Eighteenth Annual Meeting, American Fracture Assn.** Hotel Cortez, El Paso
Sept. 30-Oct. 3	**American Hospital Assn.** Hotel Traymore, Atlantic City
Sept. 30-Oct. 3	**Thirty-fifth Annual Fall Clinical Conference, Kansas City Southwest Medical Society.** Municipal Auditorium, Kansas City, Missouri
Sept. 30-Oct. 3	**Interstate Postgraduate Medical Association Meeting.** Palmer House, Chicago
Sept. 30-Oct. 4	**American College of Pathologists.** Roosevelt Hotel, New Orleans
Sept. 30-Oct. 4	**Anesthesiology: Endotrachial and Related Methods.** N.Y.U., N.Y.C.
Sept. 30-Oct. 4	**Gynecologic Neoplasms.** N.Y.U., N.Y.C.
Sept. 30-Oct. 4	**Esophageal Surgery.** Cook County Graduate School of Medicine, Chicago
Sept. 30-Oct. 6	**Annual Assembly in Otolaryngology.** University of Illinois, Chicago
Sept. 30-Oct. 11	**General & Surgical Obstetrics.** Cook County Graduate School of Medicine, Chicago
Sept. 30-Oct. 11	**Surgical Anatomy and Clinical Surgery.** Cook County Graduate School of Medicine, Chicago
Oct. 1-4	**American Roentgen Ray Society.** Washington, D. C.
Oct. 2-4	**Fifth Annual Antibiotics Symposium.** Washington, D. C.
Oct. 2-4	**Twenty-eighth Annual Symposium, San Francisco Heart Association.** St. Francis Hotel, San Francisco
Oct. 2-5	**Oregon State Medical Society.** Columbia Athletic Club, Portland
Oct. 3	**California Division, American Cancer Society.** Fairmont Hotel, San Francisco
Oct. 3-5	**Annual Scientific Sessions, Nebraska Heart Association.** Hotel Sheraton-Fontanelle, Omaha
Oct. 3-6	**Practical Electrocardiography.** Univ. of Southern California, Catalina Island
Oct. 4-6	**First Western Occupational Health Conference.** Biltmore Hotel, Los Angeles
Oct. 7-9	**Conferences in Clinical Endocrinology, Univ. of Southern California.** Hotel Statler, Los Angeles
Oct. 7-9	**Obstetrics for G.P.'s.** University of Minnesota Center for Continuation Study, Minneapolis
Oct. 7-11	**Surgery of Colon & Rectum.** Cook County Graduate School of Medicine, Chicago
Oct. 7-11	**Thoracic Surgery.** Cook County Graduate School of Medicine, Chicago
Oct. 7-12	**Mechanisms of Disease.** University of Pittsburgh
Oct. 7-18	**Urology.** Cook County Graduate School of Medicine, Chicago
Oct. 7-18	**Clinical Use of Radioisotopes.** Cook County Granduate School of Medicine, Chicago
Oct. 7-18	**Electrocardiography & Heart Disease.** Cook County Graduate School of Medicine, Chicago
Oct. 8	**Seventh Annual Professional Symposium, San Diego County Heart Assn.** U. S. Naval Hospital, San Diego
Oct. 9-10	**Twenty-seventh Annual Symposium, Los Angeles County Heart Assn.** Wilshire-Ebell Theatre, Los Angeles
Oct. 9-10	**Removal of Foreign Bodies From Lungs & Bronchi** (Enrollment strictly limited). U.C.L.A., Los Angeles
Oct. 11	**AMA Symposium on Nutrition in Pregnancy.** University of Missouri Medical Center, Columbia
Oct. 11	**Annual Meeting, Washington Division, American Cancer Society.** Olympic Hotel, Seattle
Oct. 11-12	**Endocrinology and Metabolism.** U.C.L.A., Los Angeles
Oct. 12	**Midwest Regional Meeting, American College of Physicians.** Urbana, Illinois
Oct. 14	**Varicose Veins.** Cook County Graduate School of Medicine, Chicago
Oct. 14-16	**Scientific Assembly, Medical Society of the District of Columbia.** Washington
Oct. 14-18	**Forty-third Clinical Congress, American College of Surgeons.** Atlantic City
Oct. 14-18	**Vaginal Approach to Pelvic Surgery.** Cook County Graduate School of Medicine, Chicago
Oct. 14-18	**American Society of Anesthesiologists.** Statler Hotel, Los Angeles
Oct. 14-25	**Basic Principles in General Surgery.** Cook County Graduate School of Medicine, Chicago
Oct. 14-25	**Dermatology.** Cook County Graduate School of Medicine, Chicago
Oct. 15-16	**Seventh Annual Fall Refresher, Minnesota Academy of General Practice.** Hotel Leamington, Minneapolis
Oct. 17-19	**Annual Meeting, Academy of Psychosomatic Medicine.** Morrison Hotel, Chicago
Oct. 15-18	**Otolaryngology.** Faculte de Médicine de Paris, Paris
Oct. 18-19	**Cardiac Roentgenology.** U.C.L.A., Los Angeles
Oct. 20-24	**Western Orthopedic Association.** Santa Barbara
Oct. 21-25	**Postgraduate Course, American College of Chest Physicians.** Knickerbocker Hotel, Chicago
Oct. 21-25	**Biological Approaches to Internal Medicine.** Univ. of Wisconsin, Madison
Oct. 21-25	**Medical Aspects of Workmen's Compensation.** N.Y.U., New York City
Oct. 21-25	**Ninth Postgraduate Assembly in Endocrinology and Metabolism.** Medical College of Georgia, Augusta
Oct. 21-27	**General Surgery (49 hours).** U. of California, San Francisco
Oct. 21-Nov. 1	**Fractures & Traumatic Surgery.** Cook County Graduate School of Medicine, Chicago
Oct. 21-Nov. 1	**Office and Operative Gynecology.** Cook County Graduate School of Medicine, Chicago
Oct. 24-26	**Symposium on Skin Cancer for Specialists.** University of Minnesota Center for Continuation Study, Minneapolis

(Continued on page 603)



HEALTH CARE COSTS

Several months ago we summarized some statistics on medical care costs, and we recently have had an opportunity to bring those figures up to date for our readers. The expenditures reviewed here are those that Americans made directly, as distinguished from those that they made through taxes paid to federal, state and local units of government. The figures are those of the U. S. Bureau of Labor Statistics, and they were sent to us by the AMA Bureau of Medical Economic Research.

The statistics show (1) that the total expenditures by Americans for all health items advanced once again in 1956; (2) that the portion of the privately-spent health-care dollar which went to physicians was once again shaved a bit, for increases in doctors' fees were proportionately smaller than the increases in hospital room rent, etc.; and (3) that personal incomes have risen rapidly enough so that, by and large, medical care is not an overwhelming burden.

In 1956, consumer expenditures increased $13,189,000,000. Table 1 shows that of that amount, physicians got $199,000,000; hospitals got $321,000,000; drug and sundries suppliers got $138,000,000; dentists got $53,000,000 and the purveyors of all other health goods and services got $123,000,000. All of those amounts, we reiterate, are those by which payments were increased over 1955.

Table 2 shows that doctors' charges are making up a constantly shrinking share of the individually-spent health-care dollar, and that the share going to hospitals is just as constantly rising. It was in 1955 that hospitals for the first time took a larger share than doctors did, and the trend is continuing.

Though the total cost of medical care has advanced once again, American citizens are fully able to pay it. Table 3 shows that, with the exception of hospital room rates, such costs were far less onerous in 1956 than they were in the years immediately preceding World War II. The average weekly wage in this country in the years 1935-1939 was $22.42. It more than doubled during and after the war, and it has continued rising steadily since then. In 1947-1949 it was $53.01; in 1954 it was $71.86; in 1955 it was $76.52; and in 1956 it was $80.19, only slightly less than four times the 1935-1939 average. Thus, despite increases in costs, one can see from the top line in the table (Consumer Price Index) that 54 per cent of the average weekly wage in 1956 had the purchasing power that the whole of an average week's wages had had in the years 1935 through 1939. The relative cost of physicians' services was six percentage points below that figure, and 15 percentage points below the average of the selected items that are included in the table.

These data can serve as replies to people who persist in thinking that doctors' charges burden the American people.

TABLE 1

PERSONAL EXPENDITURES FOR HEALTH CARE IN THE UNITED STATES FOR SELECTED YEARS

(Millions of Dollars)

Year	*Total Medical Care*	*Physicians' Services*	*Hospitals*	*Drugs and Sundries*	*Dentists' Services*	*All Other Medical Care**
1929	$ 2,937	$ 959	$ 403	$ 604	$ 482	$ 489
1935-39 av.	2,598	821	448	546	345	438
1952	9,397	2,676	2,398	1,569	906	1,848
1953	10,107	2,815	2,635	1,615	943	2,099
1954	10,598	2,913	2,852	1,631	975	2,227
1955	11,272	3,070	3,130	1,747	1,017	2,308
1956	12,106	3,269	3,451	1,885	1,070	2,431

* The cost (i.e., administrative expense plus profit, if any) of prepayment hospitalization and medical-surgical expense falls in this category.

TABLE 2

DISTRIBUTION OF THE MEDICAL CARE DOLLAR

(Excluding Expenditures by Governmental Units)

Year	*Physicians' Services*	*Hospitals*	*Drugs and Sundries*	*Dentists' Services*	*All Other Medical Care*
1929	32.7%	13.7%	20.6%	16.4%	16.6%
1935-39 av.	31.6	17.2	21.0	13.3	16.9
1952	28.5	25.5	16.7	9.6	19.7
1953	27.9	26.1	16.0	9.3	20.8
1954	27.5	26.9	15.4	9.2	21.0
1955	27.2	27.8	15.5	9.0	20.5
1956	27.0	28.5	15.6	8.8	20.1

TABLE 3

PERCENTAGES OF ONE WEEK'S WAGES IN 1947-1949 AND 1954-1956 REQUIRED TO BUY THE AMOUNT OF MEDICAL CARE AND OTHER ITEMS THAT COULD BE BOUGHT WITH ALL OF ONE WEEK'S WAGES IN 1935-1939

	1947-1949	*1954*	*1955*	*1956*
Consumer Price Index	71%	60%	56%	54%
Medical Care and Drugs	59	54	52	51
Physicians' Fees	57	50	49	48
Hospital Rates	87	100	99	99
Other Items				
Food	86	71	66	63
Rent	51	48	46	45
Transportation	61	58	54	52
Personal Care	74	62	59	58
Reading and Recreation		52	49	47
Motion Picture Admis.	71	61	60	58
Furniture	90	71	65	63
Men's Street Shoes	95	84	80	80
Women's Cotton House Dresses	124	86	81	78

INFLUENZA 1957

Cases of influenza in the United States last spring were somewhat more numerous than they had been in any of the preceding six years, and the outlook for next winter and spring, as all of us are aware, is rather dark. The causative virus of last spring's cases in this country was type A, and was related antigenically to the group which has been familiar since 1947. However, in January of this year an outbreak of influenza produced by an antigenically different virus occurred in northern China. In April, at Hong Kong, there were 500,000 cases, with 44 deaths, a mortality of about .005 per cent, and since then the disease has spread to the following countries:

Country	*Estimated Number of Cases*	*Deaths Reported*
Formosa	2,000,000	66
Philippines	1,600,000	over 1,200
Singapore and Malaya	500,000	10
Indonesia	10 to 20 per cent of population	43
Japan	1,500,000	5
India	128,000	108

A booklet recently issued by Wyeth Laboratories in cooperation with U.S.P.H.S. relates that the United States Armed Forces Medical Service sent specimens of virus from infected service personnel to Walter Reed Hospital for typing, and found that it was type A, but antigenically different from any previously-known strain of it. Four major immunologic types of influenza virus are known (A, B, C and D), and no evidence of cross-immunity has been found. Definite antigenic differences among the strains of types A and B have been discovered. Observations made in the last 24 years indicate that there are four serologically intersecting sets of type A strains. All strains of types C and D that have been studied have been homogenous antigenically with only one known family for each type.[1]

Salk[2] showed that influenza viruses constantly mutate and move away from the forms that once characterized them. A particular virus might be prevalent at one time, and then decline in prominence while another took its place. Hence, in each new epidemic the antigenic characteristics of the virus that appears are influenced by the immunologic effects still remaining from a previous contagion in which one of the other members of its family of influenza viruses figured.

A new strain, termed "Dutch 56" was isolated by Andrewes and Isaacs in 1956, which proved to be distinctly different from those that had been prevalent in former years, although they all belonged to the FMI set. Influenza cases in early 1957 in the United States, Europe and Asia were caused by A viruses closely related to the Dutch 56 strain.

But there appears to be little immunologic similarity between the present Asian strains and the type A strains that were recovered in earlier years.[1]

RECOGNITION

Etiologically, each contagion is distinctive, but pneumonia in general has plagued the world for a very long time. The disease derives its name from Florence, Italy, where its incidence was attributed, in the latter Middle Ages, to an unhappy conjunction of stars. It has attained epidemic proportions many times in the last four centuries.

Influenza can simulate and be confused with the common cold, undifferentiated acute respiratory disease, tonsillitis and upper air-passage infections, virus pneumonia, typhoid fever, meningitis and exanthem subitum.

An epidemic may be recognized by its explosive characteristics: sudden onset and rapid, wide spread, with the full course running through a population in from two to four weeks. Influenza can be recognized by its characteristic but relatively non-specific clinical symptoms—fever, chills, sweats, headache, sore throat, rhinitis, bronchitis, malaise and aching muscles. But the epidemic characteristics are diagnostically more important than the clinical signs. Laboratory tests are essential to a specific diagnosis. All outbreaks thus far in the United States have been among young adults. For example, one occurred among a group of approximately 1,800 young people from 43 states and eight foreign countries attending a conference in Grinnell, Iowa, two months ago. But incomplete reports from the Orient indicate that all age groups can be involved. With the coming of winter, the characteristics could change.

TREATMENT

Standard treatment is symptomatic, consisting of analgesic drugs such as aspirin and, if necessary, codeine to ease the discomfort and aches, and general measures to reduce fever.

Complications should be expected, and in the past, deaths from pneumonia have paralleled those from influenza. About 75 per cent of deaths from

influenza or from influenza followed by pneumonia have been in persons over 65 and previously in poor health.

Although penicillin and the sulfonamides have no direct effect upon influenza, they are used to combat the secondary bacterial invaders which may follow it. Since Pneumococci and Streptococci are frequent secondary invaders, penicillin is most often the drug of choice. Indiscriminate use of antibiotics should be avoided, and use should be withheld until specific indications have been noted. When antibiotics are administered, the danger of developing resistant Staphylococci should be kept in mind.

Home treatment is better than hospitalization, for epidemic influenza thrives in crowded conditions and close quarters, and because resistant Staphylococci are an ever-present menace in a hospital environment.

REFERENCES

1. Jensen, K. E.: New set of type A influenza viruses. (To be published in J.A.M.A.)
2. Salk, J. E.: Interpretation of significance of influenza virus variation for development of effective vaccine. Bull. N. Y. Acad. Med., 28:748 (Nov.) 1952.

READERSHIP SURVEY

Last month when we published a request for readers' opinions of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY as a whole and of its various sections and departments individually, we had no expectation that the Des Moines Post Office would need to employ additional clerks and carriers to handle our increased volume of mail, for we are quite aware of how much a doctor of medicine abhors answering questionnaires and, indeed, writing any sort of letter. Quite as we anticipated, we have heard from fewer than one in a hundred.

The replies we received have been most interesting. With only a single exception, the doctors from whom we have heard have favored the publication of more materials on medical economics. Several report that the "Personals" are their favorite section of the JOURNAL, and most of them have indicated that they read each issue rather thoroughly.

In the hope that larger numbers of physicians can be persuaded to give us their opinions, we are printing the questionnaire once again in this issue. Please accept our assurance that we try our best to print what we think will be of greatest interest and benefit for the doctors of Iowa. If we have been correct in our selections, we shall appreciate being told so. If we have been wrong, either generally or in particular instances, we shall continue to go astray unless our readers point out our errors.

MIDWESTERN CARDIAC CONFERENCE

A Midwestern Cardiac Conference will be held at the SUI College of Medicine on October 3, 4 and 5, under the sponsorship of the Iowa Heart Association and the SUI Department of Internal Medicine, in conjunction with the Iowa Clinical Medical Society.

THURSDAY, OCTOBER 3

9:10	"The Genesis of the Normal Electrocardiogram: Basic Electrical Theory"—L. E. January, M.D.
10:45	"The Electrocardiogram versus the Vectocardiogram in Clinical Practice"—Franklin D. Johnston, M.D., professor of medicine, U. of Michigan
11:45	"Ventricular Hypertrophy"—E. O. Theilen, M.D.
1:45	"Bundle Branch Block"—J. Scott Butterworth, M.D., associate professor of medicine, New York University
3:00	"Myocardial Injury: Ischemia, Subendocardial and Subepicardial Injury"—Dr. Johnston
4:00	"Myocardial Infarction"—Dr. Butterworth

FRIDAY, OCTOBER 4

9:00	"The Management of Hypertensive Crises"—Walter M. Kirkendall, M.D.
9:30	"Electrolyte Disturbances in Congestive Heart Failure"—Henry I. Russek, M.D., consulting cardiologist, U.S.P.H.S. Hospital, Staten Island
10:15	"Treatment of Unusual Cardiac Mechanism Disturbances"—Dr. Johnston
11:00	"The Clinical Spectrum of Coronary Heart Disease"—A. Carlton Ernstene, M.D., chief of medical service, Cleveland Clinic
12:00	"Anesthesia for Patients With Cardiac Disease"—Stuart C. Cullen, M.D.
1:45	"Indications for Anticoagulant Therapy in Cardiac Disease"—Dr. Russek
2:30	"The Differential Diagnosis of Dyspnea" A Panel Discussion—William B. Bean, M.D., Dr. Ernstene, Dr. Russek, and Paul M. Seebohm, M.D.
3:30	Question and Answer Period

SATURDAY, OCTOBER 5

9:00	"The Application of the Heart-Lung Apparatus in the Correction of Congential Heart Defects"—William H. Myerly, M.D., Des Moines surgeon
9:40	"The Surgical Approach to Congenital Heart Disease: Indications for Treatment by Open Cardiotomy"—J. L. Ehrenhaft, M.D.
10:30	"The Surgical Approach to Occlusive Peripheral Arterial Disease"—S. E. Ziffren, M.D.

President's Page

Last week the weather was unusually hot and miserable, and my spirits were low. Every physician, I suppose, sometimes feels as I did, when things haven't gone well in his practice, or when he has grown especially tired.

At that time I came across a quotation in ROBINS READER that made me feel better. I think it's worth repeating:

"He who loves best his fellowman, is loving God in the holiest way he can."—*Alice Cary*

Service, in other words, is measured by the will behind it, not by success alone. Truly, we all have had moments when we felt inadequate and helpless, and when it seemed that there was no one to whom we could look either for help or for consolation. In such situations, Alice Cary's words are good ones to remember.

Fred Sternagel

President

THE JOURNAL *Book Shelf*



BOOKS RECEIVED

PSYCHOSOMATIC MEDICINE—CLINICAL STUDY OF PSYCHOPHYSIOLOGIC REACTIONS, by *Edward Weiss*, M.D., and O. *Spurgeon English*, M.D. (Philadelphia, W. B. Saunders Company, 1957. $10.50).

AN ATLAS OF CARDIAC SURGERY, by *Jorge A. Rodriguez*, M.D. (Philadelphia, W. B. Saunders Company, 1957. $18.00).

SCIENCE LOOKS AT SMOKING—A NEW INQUIRY INTO THE EFFECTS OF SMOKING ON YOUR HEALTH, by *Erick Northrup*. (New York City, Coward-McCann, Inc., 1957. $3.00).

BOOK REVIEWS

HEALTH SERVICES FOR AMERICAN INDIANS, Public Health Service Publication No. 531 (Washington, Office of the Surgeon General, H.E.W. Department, 1957. $1.75).

This 344 page report was compiled and published by the U. S. Department of Health, Education and Welfare in response to a request from the Committee on Appropriations of the House of Representatives. The Indian health program was shifted on July 1, 1955, from the Bureau of Indian Affairs of the Department of the Interior to the Public Health Service of the HEW Department.

The study covered (1) Indian health status and need; (2) medical care and hospital services; (3) public health and preventive services; and (4) economic and social resources available for health purposes. A house-to-house survey was made of every family living on each of the nine Indian reservations, and the survey was followed by a careful medical study of a sample of the population.

It was found that Indians today have health problems resembling in many respects those of the general population a generation ago. Some of the reasons given for this backwardness are: (1) inadequate health services; (2) substandard and overcrowded housing; (3) lack of sanitary facilities; (4) low educational and economic levels. Considerable numbers cannot speak or write English, and more than half have incomes under $1,000 per year.

The book sets the Indian population of the United States at 472,000, with 335,000 living in areas with some service under the Indian health program. The three states having largest Indian populations are Arizona, New Mexico and Oklahoma.

In 1954, the Indian death rate was 20 per cent higher than the comparable national rate. Indian children have a death rate more than double the national average, and almost 40 per cent of the patient days in Indian hospitals are utilized for children under 15 years of age. These statistics considerably exceed those for the general population.

Health programs of greatest urgency are (1) tuberculosis; (2) pneumonia and other respiratory diseases; (3) diarrhea and other enteric diseases; (4) accidents; (5) eye and ear diseases and defects; (6) dental diseases; and (7) mental illness.

The Public Health Service expects to improve health services by (a) intensifying its own health activities; (b) working more closely with other federal agencies in improving community services; (c) planning with the Indian tribes and with state and local health and welfare authorities; (d) providing more diagnostic equipment, especially in the remote areas; (e) expanding preventive health programs, with particular attention to the control of tuberculosis, diarrheal and respiratory diseases; and (f) providing a more nearly adequate dental program, especially for children.

This publication contains considerable information, and anyone interested in this particular problem can get a great deal of insight by studying it.—*Wilbur R. Quinn.*

A MANUAL OF PHARMACOLOGY, EIGHTH EDITION, by *Torald Sollmann*, M.D. (Philadelphia, W. B. Saunders Company, 1957. $20.00).

The eighth edition of this pharmacologic classic has appeared exactly 40 years after the publication of the original edition. The text is growing with the times. This reviewer has only the sixth edition with which to compare it, but in doing so, he finds that the volume has grown in size and stature. The present work has more and larger pages. Each page is divided into two columns for ease of reading. As in the older editions, the larger type gives more important detail, and the smaller type gives minute particulars for the more serious student.

The first pages give general data and technics involved in pharmacology such as "Solubilities" and "General Toxicology." Then comes the bewildering array of drugs, old and new, which fit into our modern-day pharmacology. Each of the more important drugs in our pharmacopoeia is dealt with as succinctly as possible.

The present edition deals admirably with a tremendously enlarging field. It is a big job merely to list the present-day drugs, not to mention the description of each one. Obviously, only the more important ones can be discussed at length. The style is strictly scientific, as before. Words are carefully chosen, and only the "meat" is included.

One misses, at times, the chatty, easy-flowing style of Beckman.

Sollmann's text should be used for consultation and reference when one is desirous of obtaining categorized information. It continues to be unexcelled in fulfilling this function.—*Daniel A. Glomset*, M.D.

Orthopedic Surgery in the Mediterranean Theater of Operations, ed. by *John Boyd Coates, Jr.*, M.D., *Mather Cleveland*, M.D., *Elizabeth M. McFetridge*, M.A., and *Oscar P. Hampton, Jr.*, M.D. (Washington, D. C., Office of the Surgeon General, Department of the Army, 1957).

This is the second of three volumes prepared by the Medical Department of the U. S. Army devoted to the history or orthopedic surgery in the Mediterranean Theater of Operations during World War II. The Army may well be proud of the excellent treatment rendered, as well as of the standards of treatment established. Unfavorable results have been analyzed.

All surgeons dealing with traumatic wounds will certainly want to add this volume to their libraries.—*Everett M. George*, M.D.

Obesity—Its Cause, Classification and Care, by *E. Philip Gelvin*, M.D., and *Thomas H. McGavack*, M.D. (New York City, Hoeber-Harper, 1957. $3.50).

Hoeber-Harper is publishing a series of new monographs of practical interest to the medical practitioner. The 145-page book on obesity is one of them. The authors are from Flower and Fifth Avenue Hospital, New York City, and are well versed in the problem that they discuss. The book is printed in large type on rough paper. The style is easy, and each topic is succinctly dealt with. Pertinent quotations from the literature are intermingled with personal experiences of the authors in a large obesity clinic.

The book is almost entirely limited to the *mechanical* aspects of reducing, such as diet, drugs and energy output. These subjects are dealt with in a commonsense fashion. Very little of the book is taken up with the psychiatric or psychologic facets of the problem. Group therapy is barely mentioned. It is hoped that in the next edition more emphasis will be placed on the psychologic difficulties one encounters in treating these individuals.—*Daniel A. Glomset*, M.D.

Medical Services for Rural Areas, by *William A. Massie*. (Cambridge, Mass., Harvard University Press, 1957. $1.25).

This is a dynamic story portraying how effective free enterprise can be in health improvement. The booklet relates how a state medical society initiated and led joined forces in providing improved medical and health needs for a backward area.

In 1953 the Tennessee State Medical Association realized that certain regions of its state for economic and topographical reasons were devoid of adequate health facilities. In these areas, notably the Pruden Valley sector in northeastern Tennessee, physicians were few and inadequately trained. Poverty, ignorance, superstition and ill health were dominant characteristics of its people.

From funds appropriated by the State Medical Association and with help from several cooperating organizations, a survey was made as to the local health needs. From this information and with locally raised money, clinics were established in the more destitute areas. Where feasible, hospitals were constructed through local contributions and with the aid of Hill-Burton appropriations. The Tennessee State Medical Association's Placement Service was able effectively to locate qualified physicians in the areas of need. Although the final chapter of this project has not been realized, the future of the people in these destitute areas has indeed been brightened.

The Tennessee State Medical Association is to be commended for this worthy pioneering project.—*S. P. Leinbach*, M.D.

The Treatment of Burns, by *Curtis P. Artz*, M.D. and *Eric Reiss*, M.D. (Philadelphia, W. B. Saunders Company, 1957. $7.50).

The authors explain in the preface to this excellent treatise that it is primarily an outline of practices which have evolved from their experiences in the Surgical Research Unit of the Brooke Army Medical Center, Fort Sam Houston, Texas.

The management of burns is presented in a concise manner, with adequate consideration of all aspects of this often poorly-handled problem. There is a good discussion of many "controversial" aspects of our knowledge of burn treatment. The bibliography at the end of each chapter offers to the reader a challenge to pursue the subject further, if he is so inclined. The excellent photographs and other illustrations add much to the discussion.—*M. E. Alberts*, M.D.

Coming Meetings

(Continued from page 597)

Oct. 24-26	**Annual Postgraduate Course, American College of Gastroenterology.** The Somerset, Boston
Oct. 25-26	**Dermatology.** U.C.L.A., Los Angeles
Oct. 25-27	**Annual Meeting, California Society of Internal Medicine.** El Mirador, Palm Springs
Oct. 25-29	**Thirtieth Scientific Session, American Heart Association.** Hotel Sherman, Chicago
Oct. 27-30	**Association of Military Surgeons.** Washington, D. C.
Oct. 27-30	**Medical Society of Virginia.** Washington, D. C.
Oct. 27-Nov. 2	**Congress of International Society of Surgeons.** Mexico City
Oct. 28-Nov. 1	**General Surgery.** Cook County Graduate School of Medicine, Chicago
Oct. 28-Nov. 1	**Review of Recent Advances in Internal Medicine.** Tufts University, Boston
Oct. 28-Nov. 1	**Occupational Skin Problems.** Kettering Laboratory, Cincinnati
Oct. 28-Nov. 2	**Surgery of the Eye.** N.Y.U., New York City
Oct. 28-Nov. 8	**Surgical Technic.** Cook County Granduate School of Medicine, Chicago
Oct. 31-Nov. 2	**Aviation Medicine.** U.C.L.A., Los Angeles

Plan to attend the 1958
ISMS Annual Meeting
Veterans Memorial Auditorium
Des Moines
April 20-23

Iowa Academy of General Practice

NINTH ANNUAL ASSEMBLY

The Ninth Annual Assembly of the Iowa Chapter of the American Academy of General Practice will be held at the Hotel Savery, Des Moines, on September 22, 23 and 24, 1957. The program was published in the August issue of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY. The Board of Directors of the Chapter is convinced that the Scientific Assembly Committee, under the direction of the president-elect, Dr. Donald H. Kast, has formulated a "4-star" program.

It is doubtful that the membership of the Academy realizes how much work goes into the preparation of such a meeting. Briefly, here is a review of the steps taken by the Scientific Assembly Committee.

First, the date for the Assembly must be set. It is done almost exactly a year in advance. Immediately after the close of one meeting, the directors meet to set the date and place for the next one. Such promptness is necessary to start the wheels rolling. Then the new president of the Chapter names his standing committees, one of which is the Scientific Assembly Committee. The chairman of that group, as the By-Laws provide, is the president-elect. The Committee must begin to function immediately, and it proceeds to select topics in which its members believe the G. P.'s of the state will be interested.

Next, the Committee members must engage men who they think will be best able to speak upon the selected subjects. This is by no means an easy task. When the speakers are invited, and afterward, a great deal of correspondence must be carried on.

Then technical exhibits must be planned. Exhibitors are invited and are assigned spaces or booths. Usually several letters are exchanged with each of them. The technical exhibits are a highly essential part of each meeting, for it is they that defray many of the expenses.

It's not inappropriate at this point for us to call the attention of members of the Iowa Academy of General Practice to the fact that they have a responsibility for helping the Scientific Assembly Committee hold the good will and cooperation of the firms that exhibit their wares. Each member of the Academy should remember to visit the technical exhibit booths. Some of the exhibitors will be men with whom you are well acquainted. Others will be new to you, but you will find it altogether pleasant to meet and talk with them too. Remember that they aren't likely to keep coming to our meetings unless all of us take time to talk with them and to hear what they have to tell us.

This year, the Scientific Assembly Committee has added scientific exhibits, and it has selected ones that seem most likely to interest G. P.'s.

The ladies have not been forgotten. They are welcome to attend any or all of the scientific presentations, and it is hoped that they will accompany their husbands to the noon-day luncheons. The luncheon speakers and their subjects were selected especially to interest both doctors and doctors' wives. Since the Committee realized that the ladies probably would like part of the time to themselves, an afternoon musical-tea has been arranged at the home of Dr. and Mrs. Floyd M. Burgeson, on Tuesday, September 22. Transportation from Hotel Savery and return will be provided.

There are numerous other details that the Committee has had to take care of. The dealings with the hotel are rather complex. Among other things, the manager must be given estimates of the numbers of people who will attend the luncheons and the banquet. Then, a receptor must be appointed for each visiting speaker, and accommodations must be arranged. Then the menus must be decided, the social period prior to the banquet must be planned, dinner music must be secured and the dance band must be engaged.

Thus, you see, there is a lot of work that goes into the preparation for an Annual Assembly. The Committee is to be congratulated and thanked for its efforts in behalf of all of us.

In addition to attending the Annual Assembly and visiting with the technical exhibitors' booths, there is one other responsibility of which we should like to remind the members of the Academy. Please remember to mail your report on the hours of postgraduate study that you have completed. Along with that report, your officers urge you to send along any suggestions you may have for the improvement of the Academy or of its assemblies.

THE DOCTOR'S BUSINESS



Hedging Against Economic Fluctuations

HOWARD D. BAKER

WATERLOO

How can you build up your investment portfolio in such a way as to provide maximum protection against increases and decreases in the value of the dollar?

Dividing one's savings between two classifications of investments or contracts will accomplish that goal. The two types are: (1) fixed or dollar contracts such as bonds, savings accounts and mortgages having a specified or fixed redemption value; and (2) flexible or equity contracts such as corporate stocks and real estate, the price of which can be expected to vary depending on the market level.

The flexible contract serves as a hedge against inflation. As prices increase and the value of the dollar decreases, the market value of this contract will increase. The dollar contract serves as a hedge against price declines and deflation, for as the purchasing power of the dollar increases and prices go down, one is better off if he owns securities for which he can claim a previously-set number of dollars.

By maintaining your investment portfolio at an approximate 50-50 balance, you can protect yourself against both possibilities, thereby maintaining the over-all purchasing power of your savings. It is the consensus of informed people that this plan should be followed when one sets up a retirement plan. The cash value of life insurance and the discounted value of accounts receivable can be regarded as dollar contracts in the setting up of such an arrangement.

This plan should not be considered a perfect hedge, since one investment may vary more than another, but the scheme is basically sound and is generally accepted as the best economic hedge that can be built.

EXAMPLE

Here is a simple example of this plan in operation. Suppose that you have deposited $1,000 in a savings and loan association and have bought $1,000 worth of good-quality common stocks. If prices subsequently double, the effective purchasing power of your savings and loan account will be reduced to $500, but the sale value of your common stocks will increase to $1,500, and the total purchasing power of your savings will remain unchanged. If prices declined to the point that the sale value of your common stocks was reduced to $500, the purchasing power of your savings and loan account would increase to $1,500, giving you the same over-all purchasing power as before. Thus, assuming that market fluctuations are exactly equal on all goods, there would be no loss of purchasing power in either inflation or deflation.

When your basic plan has been completed and additional funds are available for investment, the hedging feature may be abandoned, but the original portfolio should be maintained in balance.

STATE DEPARTMENT OF HEALTH



COMMISSIONER

CAUSES OF DEATH IN IOWA, A CONTRAST 1881 and 1956

L. E. Chancellor

The three leading causes of death at the present time—heart disease, malignant neoplasms and vascular lesions—account for 10 times as many deaths now as they did 75 years ago. In 1956 these major causes of death were responsible for 69 per cent of the total, whereas in 1881 they accounted for less than seven per cent of deaths from all causes. The three leading causes of dath in 1956 ranked 11, 16 and 10, respectively, in 1881. Diphtheria, pneumonia and influenza, and tuberculosis were numbers 1, 2 and 3 at that time, and they were responsible for 29 per cent of the total deaths.

Six of the ten diseases that were major causes of death in 1881 were no longer in the front ranks last year. Diphtheria, tuberculosis, diarrhea, scarlet fever, malaria and typhoid fever were replaced by heart disease, malignant neoplasms, general arteriosclerosis, diabetes mellitus, suicide, and nephritis and nephrosis. Vascular lesion, accidents, pneumonia and influenza, and congenital malformations and diseases of early infancy remain among the 10 major causes of death, as they were in 1881.

Forty-one out of every 100 deaths in 1881 were due to some form of infectious and parasitic disease. At present, less than one per cent of the total deaths are caused by diseases of that type. The elimination of a large number of these diseases has resulted from biological advances in the field of preventive medicine and the effectiveness of state and local health agencies.

MORTALITY IN IOWA

Rank	*Cause of Death*	*Number*	*% of Total*
	October 1, 1880-September 30, 1881*		
	All Causes	10,668**	100.0
1	Diphtheria	1,158	10.9
2	Pneumonia and influenza	965	9.0
3	Tuberculosis	917	8.6
4	Diarrhea	663	6.2
5	Scarlet fever	467	4.4
6	Accidents	446	4.2
7	Congenital malformations and diseases of early infancy	412	3.9
8	Malaria	409	3.8
9	Typhoid fever	372	3.5
10	Vascular lesions	304	2.8
	All others	4,555	42.7
	Calendar Year 1956*		
	All causes	26,517	100.0
1	Heart disease	10,315	38.9
2	Malignant neoplasms	4,291	16.2
3	Vascular lesions	3,679	13.9
4	Accidents	1,632	6.2
5	Congenital malformations and diseases of early infancy	1,141	4.3
6	General arteriosclerosis	726	2.7
7	Pneumonia and influenza	703	2.7
8	Diabetes mellitus	422	1.6
9	Suicide	319	1.2
10	Nephritis and nephrosis	306	1.2
	All others	2,983	11.2

* The classification as to cause of death used during 1881 differs considerably from "The International List of Causes of Death" currently in use.

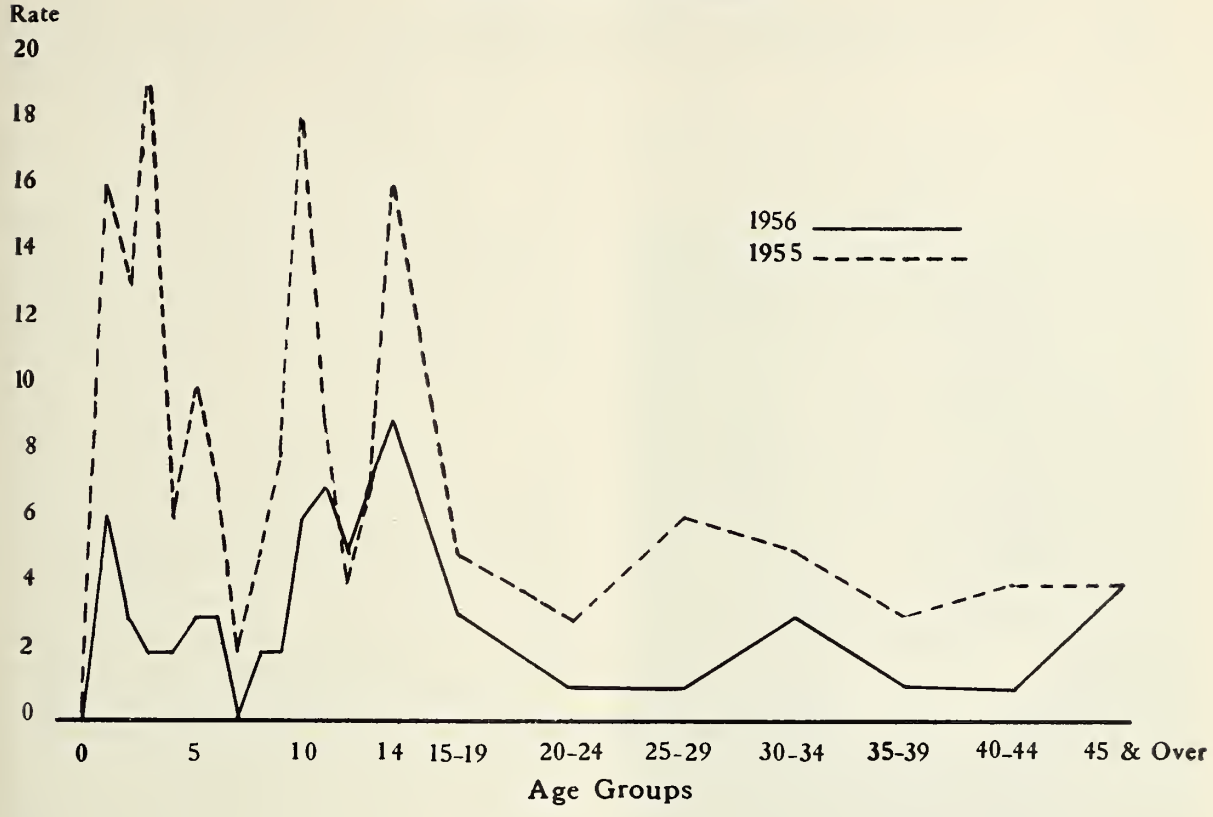
** Due to considerable under-reporting the total represents only about forty per cent of the deaths occurring during this period.

Mr. Chancellor is director of the Division of Vital Statistics in the Iowa State Department of Health.

MORBIDITY REPORT FOR MONTH OF JULY

Disease	*1957 July*	*1957 June*	*1956 July*	*Most Cases Reported From These Counties*
Diphtheria	2	0	0	Page, Woodbury
Scarlet fever	42	55	14	Boone, Johnson
Typhoid fever	2	1	5	Hamilton, Polk
Smallpox	0	0	0	
Measles	384	2,211	330	Dubuque, Scott, Story
Whooping cough	11	19	26	Polk, Scott
Brucellosis	23	7	15	Delaware, Mahaska, Scott, Webster
Chickenpox	57	261	77	Dubuque, Linn, Scott
Meningococcus meningitis	1	0	0	Scott
Mumps	182	481	107	Dubuque, Linn, Scott
Poliomyelitis	8	6	39	Polk, Story
Infectious hepatitis	5	17	22	Polk, Scott
Rabies in animals	11	32	14	Keokuk
Malaria	0	0	0	
Psittacosis	0	0	0	
Q fever	0	0	0	
Tuberculosis	33	38	37	For the State
Syphilis	78	150	88	For the State
Gonorrhea	37	57	54	For the State
Histoplasmosis	0	1	2	
Food intoxication	0	0	10	
Meningitis (type unspecified)	0	2	2	
Diphtheria carrier	0	0	0	
Aseptic meningitis	0	0	5	
Salmonellosis	3	4	4	Black Hawk 1, Johnson 2
Tetanus	1	0	2	Greene
Chancroid	0	0	0	
Encephalitis	1	0	1	Polk
Influenzal meningitis	0	0	0	
Amebiasis	8	1	2	Boone
Shigellosis	0	0	0	

PARALYTIC POLIOMYELITIS CASES BY AGE GROUPS
Iowa, 1955 and 1956
Rate per 100,000 Population



EFFECT OF SALK VACCINE IN IOWA

For study of the efficacy of the Salk poliomyelitis vaccine, only the paralytic cases have been chosen, principally because in 1956 much of Iowa's reported non-paralytic poliomyelitis was probably Coxsackie B-5 infection.

Nineteen hundred fifty-five was the first year in Iowa, as in the entire United States, when large numbers of persons were protected against poliomyelitis. By June, 1955, approximately 90 per cent of all Iowa children (aged 6 and 7 years) in the first and second grades in school had received at least one injection of the poliomyelitis vaccine. These age groups had been chosen because nationally poliomyelitis rates were highest for them. The broken line (for 1955) on the chart shows that instead of a frequency peak of paralytic cases at ages 6 and 7, there were fewest cases among children of those ages.

1956—By June, 1956, all Iowa children from 3 through 12 years of age had had good opportunity to have had at least two injections of the vaccine. The effects of the prophylaxis in this age group are shown by the inversion of the attack rate cure in this age range.

1957—To date, August 10, only three cases of paralytic poliomyelitis have been reported in Iowa. The ages of the three cases are 10, 18 and 28. The 28-year-old, with a mild degree of paralysis, had had one injection of vaccine about six months before the onset of illness. The other two cases had had no vaccine.

Each year before the advent of the vaccine, two-thirds to three-fourths of our poliomyelitis cases were among the one-third of our population under 20 years of age. Now that most of this group has had the vaccine, 1957 should show very few cases of paralytic poliomyelitis in patients under 20 years of age.

Plan to attend the 1958
ISMS Annual Meeting
Veterans Memorial Auditorium
Des Moines
April 20-23

Woman's Auxiliary News

STATE PRESIDENT, 1957-1958



Mrs. J. F. Gerken, president of the Woman's Auxiliary to the Iowa State Medical Society, was born in Indianola, and attended Simpson College, graduating with the degree of Bachelor of Music. In 1927, she married Dr. J. F. Gerken, a pediatrician, and with him she has made her home in Waterloo for more than 20 years.

Sue is very active in community affairs. In addition to being president of the State Auxiliary, she is a member of the Schoitz Hospital Auxiliary Board. She has served as director of the Christ Episcopal Choir, member of the Waterloo Symphony Board, the Red Cross, and the Mental Health Board of Black Hawk County, and in the past she has been active in the Women's Club. When the Black Hawk County Medical Auxiliary was formed, several years ago, she had the distinction of being its first president.

One son, James, was fatally injured in a plane crash in 1946.

With her very busy schedule, we wonder how Sue manages to find time for her hobbies, which include gardening, hat-making and weaving.

We know that we are very fortunate to have so energetic a president.

OUR PRESIDENT SAYS—

The enthusiastic representation that attended our July board meeting is a good indication of a successful year ahead. We were privileged to hear very interesting talks by Mr. Donald L. Taylor, executive secretary of the Iowa State Medical Society, and by Mr. Robert Throckmorton, the attorney for the ISMS Committee on Legislation. Don described the functions of the various committees of the State Medical Society and gave us a better understanding of the wide scope of the Society's interests and activities.

Bob urged members of the Auxiliary to hold informal meetings or dinner parties for from three to six physicians and their wives and an equal number of lay couples who are leaders in the community. The purpopse should be to get the guests to make constructive criticisms regarding the practice of medicine locally. If one Auxiliary member in each area were to be hostess to such a group and were to report the gist of the discussion to us, we could pass the information on to the Medical Society, thus helping it to evaluate its program. This project could be a source of real help to our doctors and to the Society. Will any of you volunteer to undertake such a project? Let me know whom you have as guests, and summarize their comments for me.

Bob also recommended that the Auxiliary pay special attention to mental health legislation. He expressed willingness to meet with any committees we may have, to give us a more detailed report on legislative activities in that area at the recent legislative session and to suggest possible activities for us in preparation for the next session of the legislature. He stated, however, that our primary help would come from the Medical Society, and that Don would guide us in coordinating our activities with those of the appropriate ISMS committees.

Most Auxiliary meetings will start in September. Before you ask someone outside your Auxiliary to help with a program, look to your own members. You may have hidden talent that you know nothing about. Almost certainly you'll find that you have members who can sing, play the piano, give book reviews, arrange flowers or talk on one of the many projects we have on our list. We are not professionals, but each of us is accomplished in one way or another. Encourage your own members and have fun!

We are all safety-conscious, and it is my feel-

ing that every county Auxiliary should devote some time during the year to the formulation of a safety program. Several of your board members attended the Safety Conference held in Des Moines this summer and were asked to be panel leaders. They gathered some ideas there that they will be glad to share with you. There is a very definite need for safety education in Iowa. Did you know that only 119 elementary schools in Iowa have sufficiently integrated safety programs to entitle them for inclusion on the National Safety Council's School Safety Honor Roll? There are few bicycle-safety programs in Iowa, yet 12 children were killed while riding bicycles last year! I'd very much like to know that those of you who haven't already completed your program plans for this year are willing to include SAFETY!

—Sue Gerken

A.M.E.F.

Please give $1 or more per capita to A.M.E.F.

Please buy Iowa Auxiliary A.M.E.F. note paper, with matching envelopes.

Please remember to send in memorial donations and to request memorial folders to send to the bereaved.

And keep in mind that special folders are available that you can send to friends for whom you make appreciation gifts to the A.M.E.F.

Make this a big A.M.E.F. year for your Auxiliary!

—Mrs. Lester R. Hegg
State A.M.E.F. Chairman

THE CHATTER BOX

The **L. L. Leightons** of Fort Dodge have returned home from a two weeks' trip to New York City. En route, they visited their daughter and family, the **James Greers**, in Toledo, Ohio, and their son, **Don Leighton**, and family in Westfield, New Jersey.

The **Neal Addisons**, of Waterloo, are the parents of a new baby boy.

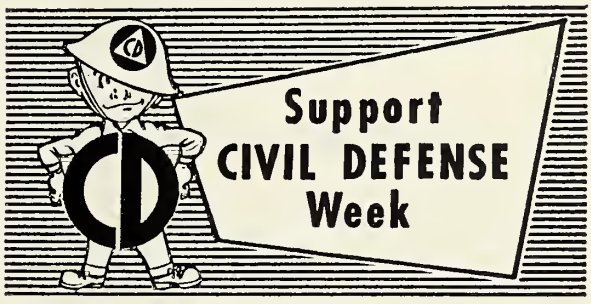
The **Tom Updegraffs**, of Waterloo, have returned after a vacation in northern Minnesota. They were joined by **Bob and Ginny Updegraff** and their two children, of Des Moines.

The **Perry Amicks**, of Des Moines, are home after spending a week at Lake Okoboji.

The **Joe Schupps**, of Des Moines, have named their new baby boy **Daniel.**

Frank and Dorothy Forsythe, of Newton, accompanied by their two children, spent two weeks at Lake Okoboji.

John and Pearl Thomsen, of Des Moines, have returned home from a trip abroad. John attended a meeting in Stockholm, after which they toured Denmark, Germany, Sweden and England.



The Second National Civil Defense Week will be observed this year from September 15 through 21.

Shortly you will receive a yellow sheet of suggested Civil Defense activities from our national chairman. Won't you help keep America strong by including a civil defense project in your year's activities?

Here are four suggestions for a starter:

1. Emphasize the importance of Civil Defense Exhibits at your meetings; use county fairs, PTA's, women's clubs or the other organizations you work with. Use Mr. Disaster—very good, but order months in advance from: Chief, Bureau of Medicine and Surgery, Department of the Navy, Washington 25, D. C.

2. Grandma's Pantry.

3. Hat box for all cars—First Aid Supplies; write to Mrs. Paul Rauchenbach, Chairman, Civil Defense, Woman's Auxiliary to the AMA, 612 East 29th Street, Patterson, New Jersey.

4. Suggest that your Future Nurses Clubs should take up Home Nursing and First Aid as part of their club program.

Please let me know what Civil Defense projects you plan to use and how they work out, so that I may pass the word along. Be sure you get publicity to stimulate interest, and send me a copy.

Jane King, Chairman
Civil Defense

WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

President—Mrs. J. F. Gerken, Waterloo
President-Elect—Mrs. H. C. Merillat, 2800 Woodland Avenue, Des Moines 12
Secretary—Mrs. Wm. C. Shinkle, 907-49th St., Des Moines
Treasurer—Mrs. E. A. Vorisek, 6205 Woodland Rd., Des Moines 12
Editor of THE NEWS—Mrs. E. T. Burke, 601 S.W. 42nd Street, Des Moines 12
Asst. Editor of THE NEWS—Mrs. D. F. Crowley, Jr., 663 44th Street, Des Moines 12

DOCTOR

We Need Your Opinion

For the purpose of continuous improvement of your STATE MEDICAL JOURNAL—in reading content—original articles, editorials, news, economics and other subjects pertaining to statewide and national affairs, it is urgently requested that you spare a few moments to fill in and return this questionnaire.

YOUR RESPONSE TO QUESTIONS BELOW WILL BE MOST HELPFUL.

	MORE	LESS
Indicate your choice on scientific papers		
News items		
Business (Taxes, Investments, legal info.)		
Personals		

Features to be added or increased

.....

Features to be deleted or decreased

.....

Indicate your favorite department or feature

.....

Do you read your STATE MEDICAL JOURNAL?

Every month Frequently Occasionally

Do you read advertisements? Regularly Occasionally

Please indicate one product advertised of particular interest to you in last two issues

.....

Name medical journals you read in order of interest. Indicate position you would give your STATE MEDICAL JOURNAL:

1. 4.
2. 5.
3. 6.

PLEASE RETURN THIS PAGE TO

The Journal of the Iowa State Medical Society
529 Thirty-Sixth Street
Des Moines 12, Iowa

The Claim Agent, the Doctor and the Injured Worker

HARRISON L. McLAUGHLIN, M.D.

NEW YORK CITY

TOTAL INJURIES TO steam railway employees on duty in 1923 approximated 153,000. By 1943, this annual toll had dropped to 46,000, and in 1935 it was reduced to 18,000. This enviable record loses some of its lustre, however, when one notes the fact that there was no appreciable trend toward a reduction in the injury rate *per million man hours* in the past 25 years. To an outsider—though, as it happens I was a railroader myself 25 years ago—this immediately suggests that railway accident prevention programs reached peak efficiency 25 years ago, or have remained static for 25 years. However, I do not intend to philosophize about accident prevention, but rather to discuss some of the problems consequent to the accidents that do occur.

The leading actors in these everyday dramas are the claim agent, the doctor and the injured workman. There is an invariable supporting cast, each member of which in some degree influences the outcome of the performance. There are usually two lawyers, one for and one against, a union representative, a referee, family and friends, fellow workers who have been through the compensation mill, and finally opposing teams of partisan physicians who pose as experts. These make up a formidable cast, but as a rule, likes bees around a honey pot, most of these lesser actors eventually make their appearance on the stage.

NON-ORGANIC COMPLICATIONS OF INJURY ARE REAL ONES

I invite your attention to the star of the show—the injured workman. He has a body and a soul. His soul is reflected in a personality which responds to the stress of an injury fully as much as does his body. His body may be young or old, fat or thin, healthy or diseased, and the net of these physical characteristics will influence its organic response to injury. His personality may be placid or excitable, introvert or extrovert, mature or immature, and the net of these basic traits will influence his emotional response to injury. Every personality remains adjusted to its environment by means of a buffer system of hopes and fears, triumphs and disappointments, aims and frustrations. These emotions normally must be maintained in balance for the preservation of pride, dignity and an acceptable measure of self-respect. Consequently, a normally unstable or precarious balance may be disturbed profoundly by an insignificant injury, but a mature and stable personality may take the consequences of a serious injury in stride.

Disturbances of emotional equilibrium following injury commonly are manifested by signs and symptoms which are without any recognizable organic basis. Are these abnormal? Is the patient imagining the symptoms, or prevaricating the signs? An affirmative answer to these questions must indict the great majority of all injured persons who sooner or later complain of bad-weather pain at the sites of their healed injuries, and the more than 50 per cent of all persons injured in automobile accidents who react neurotically in one way or another. Before he calls such a complaint psychosomatic, functional or malingering, the surgeon or the claim agent should recall his first public address, and the palpitation and increased pulse rate, loss of appetite, cessation of salivary-gland function, and jitters that preceded it. Let him recall whether the symptoms resulting from these psychologic phenomena were any less real for lack of an organic cause. Let him speculate about whether those symptoms would have subsided or persisted if the emotional stress that preceded his first public address had lasted for weeks or months. After such a self-examination, a surgeon will then hesitate before advising the injured man to forget about complaints for which no organic basis can be found, and will quit giving such brusque admonitions as, "That's all in your mind." The claim agent, likewise, will hesitate before aggravating an existing disorder by "getting tough." He will realize that there are physiological and symptomatic responses to an emotional disturbance which may prove just as consistent, if not as well understood, as those resulting from disturbances of the fluid and electrolyte balance of the body, and he will realize that a pain arising from such a cause is, to the patient, just as real as the pain from a broken leg. To dismiss it without sympathy and reassurance is but to accentuate its severity. Such complaints are far too common to be classified as abnormal. Their primary cause is emotional stress, and the contributing factors include anxiety, suggestions, iatrogenics and litigation.

Dr. McLaughlin is a professor of clinical orthopedic surgery at the College of Physicians and Surgeons of Columbia University.

THE INJURED WORKER NEEDS REASSURANCE

Anxiety is a most potent source of emotional stress. An accidental injury often is complicated by the victim's conjuring up a complex nightmare filled with fears of permanent disability, sequelae, failure of recovery, loss of work and earning capacity, hardship in the home and innumerable other worries which may be overt or occult. The wise surgeon immediately dispels as many of these spectres as he can. But it is not within his province to assure the injured man that his job is safe, that he will be fitted for some other form of gainful occupation if the results of the injury prevent his returning to his regular job, and that his wife and children will not be destitute. These reassurances are the responsibility of management. They are obligations of the individual employer, and they are ones that he can't repudiate. Finally, they are a duty of the claim agent. These reassurances will prove the best possible insurance against a protracted claim and a thick, heavy and discouraging file. They should be implemented at the earliest possible moment, in order to forestall uncertainty which is the mother of anxiety. They should not be omitted in any case, for severity of injury alone is not a reliable index of stress potential. A crushed finger is apt to have as profound an emotional impact upon a musician as the loss of a leg has upon a laborer.

Let us suppose that the physician-claim agent team omits this supportive therapy and leaves the injured man to his worries. Chronic neglected anxiety, whether obscure or obvious, soon begets feelings of inadequacy and guilt, a subconscious desire for revenge and various other compensatory emotional reactions—for the ego must be sustained at all costs. The well-stabilized personality sooner or later regains emotional balance and adjusts to the effects of the injury. Certain individuals overcompensate and go on to greater things as a result of adversity. But the unstable personality often is overwhelmed and must resort to some form of escape mechanism in order to support the ego.

In any circumstances, some form of compensation is necessary to the subjective preservation of personality and self-esteem. In this process, distorted emotions often are sublimated into an exaggeration of existing symptoms, or the patient displays symptoms for which no organic cause can be found. Such emotional responses should not be thought of as psychoses, for existing psychotic conditions are not often altered appreciably by an injury. They are psychological responses to the stress produced by trauma, and as normal as the dry mouth of a novice public speaker. Although they do not conform to as consistent a pattern as the physical responses to injury, they are as innate a product of the injury and its sequelae as are hemorrhage and healing.

POWER OF SUGGESTION

Suggestion is another potent source of emotional turmoil. It is impossible for a person voluntarily to perspire, to raise his pulse rate and blood pressure, to cause goose flesh to appear and his hair to stand on end. Yet I experienced all those phenomena while walking a deserted stretch of track one dark night, although previously I had walked the same deserted stretch many nights without a qualm. On the night in question the police were searching the area for an escaped murderer, and it seemed to me that every dark shadow contained the fugitive. My reactions were due solely to suggestion, yet they were quite as physiological and unpleasant as if due to some organic cause. If suggestion can have such effects upon a normal healthy individual, how much more potent will be the effects of suggestion by a surgeon upon an injured person?

Regrettably it is our own profession that must be indicted as the chief culprit in delaying and, indeed, sometimes in preventing the recovery of the injured workman, through the medium of suggestion. We may do this unconsciously, through carelessness or ignorance, but at some time we may do it deliberately and for reasons less than laudable. It is not necessary for us to make bankrupt the remaining emotional reserve of a man who is worried about a little patch of numbness following a knee operation by making the blunt statement, "The nerve to your knee was cut," or to tell the man who has fallen from a freight car and fractured a transverse process, "Your back is broken." Fully as much as physical factors, suggestions such as these are the things of which catastrophes are made.

We have begun using a new term, *iatrogenic*, in referring to psychological effects produced by physicians. Iatrogenic effects should always be beneficial, but too often they prove to be additional insults superimposed upon an already overtaxed emotional equilibrium. Any unguarded remark within earshot of a patient, if left unexplained or uncorrected, may precipitate an obstinate neurosis by anxiety or suggestion. And yet, how often is the injured workman dissected, picked apart and held aloft for all to see by so-called medical experts who care little about his welfare, while he sits at the hearing table and listens, and how often, during rounds, is the ward patient discussed and then left to make his own interpretation of the physicians' remarks. His own physician, who is interested in his welfare, must take great care not to say things that can be misinterpreted.

To tell a patient, "This is the worst case I have ever seen," is of course a psychological quirk of the surgeon, but it may produce one in the patient. The unadorned injunction, "You should take it easy," may tip the scales against recovery. It may make the patient a chronic emotional and physical invalid. The indefinite continuance of

some empirical or purely palliative measure such as diathermy, for want of something better or for a less laudable reason, is not only poor practice, but almost quackery, and represents one of the commonest and most important causes of neurotic conditions.

To tell the patient *nothing* is worst of all, for anxiety is bred of uncertainty. The surgeon must never forget that his every word and action is absorbed and interpreted by the patient. The iatrogenic results are the physician's reward or his ignominy.

LITIGATION IMPEDES REHABILITATION

Finally, having suggested some of the delinquencies of the claim agent and the physician, I invite your attention to some of the implications of litigation that are a common impediment to rehabilitation. It must be accepted that the primary desire of every injured person is to recover as soon as possible. But modern society is such that most injured workers also anticipate monetary compensation for what has happened to them, from one source or another. Almost from the start, they are beset by a sequence of psychological forces, each predisposing them to submerge their desire for rapid and complete recovery under the waters of avarice. The first of these may be a casual or deliberate magnification of the injury by the doctor. Following in rapid succession come suggestions from friends, relatives, union representatives, lawyers and others that the patient himself must magnify his troubles in order to recover as large a settlement as possible. Before long, the intransigence of a claim agent or insurance adjuster may transform these incubating suggestions into a conscious or subconscious determination not to let anyone "put anything over" on him. The desire to recover his health soon becomes subservient to a conviction that persistent symptoms and disability are necessary to a defense of his legal position, until the argument is adjudicated. Preconceived malingering is rare. Exaggerated incapacity that persists beyond all normal expectation without organic substantiation must be accepted as a normal response to the widespread conviction that gold is the treatment of choice for injury and disability.

The irony is that gold is not the cure but, in fact, is the disease itself. It contaminates every nook and cranny in the environment of most compensation and insurance claims. It is not surprising that so many claimants contract gold fever, for although at the outset they may have been innocent of any desire except to recover, they are quickly made to feel that they are pawns in a larger game played by professionals whose motives are anything but altruistic. What these claimants become is what we professionals make of them, and when the product is not to our liking, we must accept a major portion of the blame.

In the higher echelons, management, labor, medicine and the law look benignly down upon these machinations, paying unanimous lip service to the principle that industry must care for its injured, but must pay nothing but money to the injured man for the loss of his productivity, dignity and self-respect. The annual price for this "penny wise and pound foolish" policy is enormous—a total cost in excess of $10,000,000,000; a cost to industry that equals $50 for every worker; a wage loss in excess of $3,000,000,000; a medical and hospital bill of $50,000,000; and, most unfortunate of all, a bill of almost $2,000,000,000 for the administration of the claim settlements. Not too many years ago, there was widespread consideration of a proposal to increase the national debt above $50,000,000,000. Surely an accident cost of $10,000,000,000 deserves similar concern, and justifies every effort possible to improve this deplorable situation.

SUBSTANTIAL IMPROVEMENT IS POSSIBLE

Certain obstacles to such an improvement must be recognized and accepted. Some of them are permanent fixtures, but others are temporary roadblocks which in time will be eliminated or surmounted. Human nature, a lust for money, the fallibility of human judgment, and variations in the competence and wisdom of physicians are here to stay. But it is to be hoped that the present inconsistencies of compensation and insurance laws throughout the various states will some day be reconciled, that the vicious effects of current seniority rules upon rehabilitation of the injured workman will soon be recognized and corrected by organized labor, and that management will come to appreciate the extravagance of a policy that in practice limits its social responsibility to the mere purchase of an insured man's body and soul. Nevertheless despite all the obstacles, I submit for your consideration that substantial improvement is possible, even with things as they are. A reduction in the fantastic costs of industrial accidents can be accomplished.

Reduce the formula of management, medicine and labor down to the fundamental ingredients of every compensation claim: claim agent, doctor and injured worker. Here are three individuals faced with different aspects of a single problem, but all have a common objective—to return the injured man to work as soon as possible and with his faculties minimally impaired. These three individuals, above all else, should be pulling together toward their common goal, and yet a goodly portion of the cost of compensation results from the necessity of protecting these men from one another. That they should ever become opponents is ludicrous and a travesty upon the purposes of their assignments. That they should have differences of opinion is inevitable, but that these differences should be reconciled easily and quickly

in the light of their common goal is only sensible.

Cooperative teamwork by these three men can commence only after a true rapport between the claim agent and the injured man has been established. This must be initiated by the claim agent. Nothing but trouble can result when these two men elect to become antagonists, one with the avowed purpose of "buying up the claim for as little as possible," and the other man equally determined to wring out of it every penny he can. Thus the seeds of disaster are sown in fertile ground to produce a crop that is unnecessarily expensive to industry, frustrating to the claim agent and catastrophic to the injured worker. I invite you to contemplate how much different the results might be if, at the commencement of every compensation negotiation, the injured worker were given some reason to look upon the claim agent, not as an instrument of powerful forces marshalled against him, but as a friend in his hour of need. In such a Utopia, there would be little need for lawyers and prolonged litigation, the intervention of organized labor would be unnecessary, the harmful effects of anxiety and suggestion would be minimized, and most of the excuses for prolonged treatment and disability, unsupported by evidence of organic pathology, would be obviated.

In a small way, and from my admittedly limited surgeon's viewpoint, I have attempted to depict for you some of the causes and pathomechanics which contribute to the production of a substantial percentage of our industrial cripples, and to the unnecessarily exorbitant costs of industrial accidents. In all humility, I suggest that despite all obstacles to a betterment of our compensation system, if improvement is to occur, it must commence —even as charity begins at home—with the development of a spirit of cooperation, rapport and mutual trust among three individuals: the claim agent, the doctor and the injured worker.

Alarm

Physicians may be interested in knowing how many people today are entitled to some degree of medical care from the federal government at no cost to the individual concerned. The figures are rather startling.

The largest group numbers 22,529,000 living veterans, all of whom have the right to present themselves at a Veterans Administration hospital and after filling out certain forms, if they state they cannot afford to pay for the care they need (and the Veterans Administration is prevented by law from going behind this statement), they may receive care for any illness or injury they may have. It is interesting to note that 111,540 patients was the average daily bed census in 1956 and at least two-thirds of these were non-service connected.

The next largest number is approximately 5,200,000 military personnel and their dependents. There are almost as many, 5,100,000 public assistance recipients. There are 370,000 Indian and Alaskan natives entitled to federal medical care and 300,000 beneficiaries of the Public Health Service. Two hundred thousand of these are merchant seamen who are entitled to free medical care if they have served as much as 90 days aboard ship within 60 days prior to admission, except that they may be readmitted at any time for care of a previously authorized disease or injury. This is a total of 33,569,000 persons.

Legislation currently proposed would provide for partial federal payments for sickness and injury of federal employees and their dependents, about 7,000,000 in addition, which would make a total of nearly 50,000,000 people entitled to free government care to some degree. That is nearly one in every three.

The answer to the problem is simple. Each physician must assume his proper position in a democratic society. The closer people live to each other and the more interdependent they become the more their problems, including medical care, become a mass problem rather than individual problems. Perhaps physicians have been slow to recognize this fact. Certainly many of the solutions which have been devised have been devised without much interest on our part and in many instances without our approval. It has been well said that the citizen who will not interest himself in politics at the level of the primary will be at the mercy of those who do.

The original word the Greeks had for a person who would not interest himself in politics was "idiot," and it later came to mean a professional fool—of course in the sense of the word *jester*—but I am afraid that most of us at one time or another could have put on the cap with the bells.

Remember, in the words of Edmund Burke, that "all that is necessary for the triumph of evil is that good men do nothing."

—*T. H. Alphin*, M.D., director of the AMA Washington Office, in MISSOURI MEDICINE, 54: 860-863, (Sept.) 1957.

The Fort Dodge Foundation For Academic Achievement

A NUMBER of physicians and other civic leaders in Fort Dodge, Iowa, have begun the fourth year of a project designed to promote and popularize scholarship as the principal objective of their schools. Their program so far has centered about the recognizing of graduating seniors who have made outstanding academic records, but it is being broadened to include the providing of special educational opportunities to gifted students and the promotion of special rewards for teachers whose accomplishments are exceptional.

The group, called the Foundation for Academic Achievement, holds an annual banquet, to which are invited equal numbers of boys and girls selected from the honor rolls of graduating seniors provided by the administrative officials of Fort Dodge Senior High School and St. Edmonds High School, a Roman Catholic institution. The parents of the honorees are also invited. The numbers of guests from the two schools are kept proportional to the sizes of their senior classes, and larger numbers are being invited each year. The guest speaker at the 1957 banquet was Dr. Norman B. Nelson, dean of the College of Medicine at the State University of Iowa.

The students who are thus singled out are, of course, provided additional recognition by the newspaper stories and pictures that appear after the Foundation's banquet.

Even at this early stage in its history, the Foundation can be credited with at least partial responsibility for (1) the establishment of an educational enrichment program in the Fort Dodge public schools; (2) increasing local interest in college-scholarship recipients and in academic achievement in general; (3) evidence of competition for the privilege of attending the Foundation's banquet; and (4) numerous articles and editorials in school papers concerning academic achievement.

THE PARTICIPANTS

Dr. Paul M. Kersten and his father, the late Dr. Ernest M. Kersten, are said to have been principally responsible for the establishment of the Foundation, but it is, nevertheless, the successor to a smaller organization. Over a period of several years, a group of physicians met early in the morning on one day each week for a general discussion of scientific and nonscientific subjects, the topic for each meeting being suggested by the host for the day. Those men soon discovered that they were agreed in deploring the apparent lack of interest, by parents and youngsters alike, in the prinicpal function that schools are supposed to perform. They were particularly disturbed by the effect that that apathy seems to have had upon medical and other scientific enrollment at the college level. Gradually, they found themselves turning to this topic week after week, regardless of what one their host had assigned. In consequence, the physicians decided to do something about it, and when they had made some tentative plans, they invited several laymen to join them in their endeavor. The Foundation was established in time for the presentation of the first academic recognition banquet in May, 1955.

The members of the Foundation at present are Arthur P. Echternacht, M.D., Dan S. Egbert, M.D., Otto N. Glesne, M.D., Walter E. Gower, M.D., Mr. Stanford W. Griffith, an architect, Mrs. E. M. Kersten, Herbert H. Kersten, M.D., John R. Kersten, M.D., Paul M. Kersten, M.D., Mr. F. E. Phillips, a merchant, Mr. Dwight G. Rider, an attorney, Mr. Wallace A. Rogers, an insurance underwriter, Mr. Seymour E. Spilka, a merchant, Mr. Walter B. Stevens, a newspaper editor, Donald E. Tyler, M.D., and J. J. Weyer, M.D.

THE "GIFTED CHILD" PROGRAM

The members of the Foundation recognized, rather early in their deliberations, that according deserved recognition to graduating high school seniors would help in stimulating younger children to get really good educations for themselves, but that the tendency in American schools of shaping courses of study to fit the capabilities of the average child, and of giving "busy work" to occupy the spare time of the talented few was preventing even the scholastic leaders from making maximum use of their time, and indeed was encouraging them to become intellectually lazy.

With the cooperation of Fort Dodge school administrators, the members of the Foundation invited Mr. Clyde Parker, superintendent of schools at Cedar Rapids, to appear at a meeting and describe the very successful "gifted child" program in his school system. Subsequently in Fort Dodge, a special teacher has devoted full time to the problem of finding such children in the public schools and of helping classroom teachers bring an enriched program to them.

It is very fine, of course, for youngsters to get near-perfect scores in tests devised for classes made up of students of varying intellects, and to complete routine assignments altogether satisfactorily. But it is far better, both for the future of

the nation and for the future of the individuals themselves, if bright pupils are constantly challenged—given opportunity and encouragement for supplemental reading—for in that direction lies the stimulus to creative activity, the hallmark of the leader.

PLANS FOR THE FUTURE

The membership of the Fort Dodge Foundation for Academic Achievement is being enlarged as interested citizens are invited to become either regular dues-paying members or sustaining members, contributing what they desire to the support of the Foundation's program.

For the future, plans are being formulated for providing recognition to outstanding teachers. Though the group recognizes the difficulty of establishing criteria for the granting of such rewards, it feels that there are many teachers who deserve added recompense for their efforts on behalf of the children of the community. In addition, there has been some consideration given to the possibility of the Foundation's setting up a program of college scholarships.

These activities of the Fort Dodge Foundation for Academic Achievement reflect the following set of principles, which its charter members wrote into its Articles of Incorporation:

1. A sense of personal responsibility and an expectation of reward for individual effort must be cultivated in our children if our society is to preserve its freedom.

2. State paternalism and its neglect of individualism constitute a threat to the personal liberties of our people.

3. Our citizens and our general economy prosper best when every individual citizen is encouraged to develop his or her talents to the highest levels of attainment and productivity.

4. High achievements in the arts and sciences by all of our citizens, but particularly by our most talented citizens, are essential to the survival of our society in this ever uncertain world.

5. Personal honesty, industry, initiative and a spirit of competitive cooperation must be encouraged in all our people, and particularly in our children, who are the mature citizens of tomorrow.

6. Our schools and our teachers, working in partnership with parents, play an essential role in developing the latent talents of our children.

7. Schools have been established to provide our children with an education. They are an open door to priceless knowledge and opportunity. We must not let our children forget this true purpose of the schools.



The present officers of the Foundation for Academic Achievement are, from left to right, Mr. Donald E. Tyler, chairman; Mr. F. E. Phillips, secretary-treasurer; and Otto N. Glesne, M.D., vice-chairman.

Scientific Articles

Abdominal Pain: My Clinical Approach To the Problem

H. W. RATHE, M.D.

WAVERLY

THE MANNER IN which we approach the diagnosis of any illness will vary from physician to physician, for each of us will be influenced greatly by his early teaching, his experience and the environment in which he works. My own diagnosis is somewhat influenced by first impressions—by the patient's gait and posture when he enters the examining room or goes to the scale for weighing, or to the toilet for the urine specimen. This phase of the examination is, of course, lost to us when the patient is first seen in bed either at home or in the hospital. Previous acquaintance with the patient or his family is also of great help in the examination. If you know that the emotional factor of a family tends to "color" any clinical picture either by leading you to exaggerate or by leading you to under-estimate its seriousness, you know that your clinical ability is going to be put to as tricky a test as you have ever taken. I am reminded of the elderly man who once was reluctant to give the story of his pain, and told the physician he had come for *him* to find out what it was. The physician promptly told him the location in town of the doctor who did not get a history from any of his patients—the local veterinarian. The longer I practice medicine, the more difficult I think it is to separate the symptoms of organic disease from those resulting from what we term functional illnesses. I have learned, for example, that one must be very wary of telling a patient who is going to have a cholecystectomy for gallstones that he will be free of all of his symptoms. The great majority of such people have symptoms and signs of irritable bowel accompanying the gallbladder disease, and they continue to have those symptoms after the surgery. I explain this probability to the patient.

The complaint of abdominal pain may be as variable as a mild distress or "sick feeling" to the agonizing pain of a gastro-duodenal perforation or renal colic. The patient's description of the location of the pain is often unreliable, and it is very important that he localize the point of the pain with his finger. Often a so-called "belly-ache" or abdominal pain may actually be in the low chest or inguinal region. Obese individuals pose a particular problem. In some of these persons, physical examination is almost worthless, and one is compelled to rely on history, laboratory tests and x-ray studies.

I do not think it trite on this occasion to emphasize the need for a complete and thorough physical examination in making the correct diagnosis of the cause of abdominal pain. We all have probably erred on more than one occasion in examining only the abdomen and depending upon the local findings to give us our major clues.

IN CHILDREN

The abdominal pains of children are more challenging than are those of any other age group. The probable reason is that the child rebels at being examined, especially if he is going to be "stuck with a needle." If the child is frightened, one must proceed with great caution. At times, he is apt to withhold important information when he sees the physician, because of fear of what may be done to him.

The most frequent cause of abdominal pains in children from infancy to adolescence is constipation. The child will often become ill at school. A physical examination may reveal nothing ab-

Dr. Rathe is an internist at the Rohlf Memorial Clinic.

normal, or there may be evidence of "marble stools" in the colon or rectum. Here, an enema will usually give relief. More extensive questioning will bring out a history suggestive of poor bowel training, emotional problems and, in many cases, the lack of proper bulk in the diet.

In this younger age group, particular care must be given to the differential diagnosis of acute appendicitis. Frequently it is difficult to rule out acute enterocolitis. Both diseases may be present, and occasionally, if there is a leukocytosis and well localized abdominal and rectal tenderness, surgery will be advisable. Abdominal pain may be an initial symptom in cases which prove to be acute mesenteric lymphadenitis, acute tonsillitis, acute otitis media and infectious diseases, particularly scarlet fever.

One type of abdominal pain in the young with which I have had personal experience because of a family history, is that of hydronephrosis caused by ureteral obstruction. The cause may be a kinking of the ureter, it may be anomalous vessels or it may be uretero-pelvic strictures due to fibrous bands. This pain is frequently para-umbilical or epigastric, it is often sudden in onset, and it does not have any of the usual characteristics of renal pain. Para-vertebral tenderness is seldom a physical finding in this type of hydronephrosis. When nausea and vomiting, a slight degree of fever and a moderate leukocytosis are present, acute appendicitis may be erroneously diagnosed. My early experience with this syndrome consisted of two errors in diagnosis which fortunately were corrected by intravenous pyelography, a procedure which became available at that time. There may be acute abdominal tenderness over the kidney involved, and during or soon after the attack, there may be a few red blood cells in the urine. Diagnosis can usually be made by intravenous pyelography, with one of the films taken in the upright position.

One child, a seven-year-old girl, whom I saw during several attacks of abdominal pain and who had several normal pyelograms, had an attack in which I detected gallbladder tenderness. Cholecystography revealed gall stones, and the gallbladder and gallstones were removed. She has been symptom-free throughout the three years since the operation. Meckel's diverticulum, duodenal ulcer and pin worms may often be the cause of vague or acute abdominal pains in children, and they must be ruled out as possible etiologic factors. Allergy to foods and other substances has been uncommon as a cause of abdominal pain in my experience. At least, I have failed to recognize it as a factor.

IN ADULTS

In adults, among the commonest causes of abdominal pain for which we cannot find an intra-abdominal disease are those associated with the cardiovascular and pulmonary systems. The typical pneumococcic lobar pneumonia, which we seldom see now, starts with a chill, fever and pain, which may be in one or the other of the upper abdominal quadrants, accompanied by muscle rigidity and tenderness. Pneumonia involving the right lung may simulate acute cholecystitis and, at times, acute appendicitis. A pleuritic rub and the subsequent course reveal the diagnosis. Herpes zoster is not uncommonly a puzzling cause of pain until the rash becomes evident. We are usually helped here by the fact that the patient may have had the pain for a day or two before seeking medical help, and by then we have a fairly good indication of what is happening. It is important to remember that an acute pericarditis, dissecting aortic aneurysm and myocardial infarction are causes of upper abdominal and epigastric pain. Congestive heart failure, either acute or chronic, may cause considerable pain in the right upper and mid-upper abdomen by passive congestion of the liver. This pain can be very acute and severe, and is accompanied by a tender, swollen liver. A dehydration program for a day or two helps relieve the pain and decrease the hepatomegaly.

The patient with acute abdominal pain who enters the examining room stooped over and gives a story of pain across the upper abdomen for a few hours, followed by right lower abdominal localization of the pain, suggests inflammation of the appendix. Localized tenderness in the region of the appendix, with right rectus muscle rigidity and tenderness in the right rectal fossa on rectal examination will usually be due to acute appendicitis. There may be a normal temperature or only a slight fever. The white blood count will usually be elevated. If the total count is not increased, there will almost always be an increase of the early forms of polymorphonuclear leukocytes. Occasionally one may be in doubt when pus cells are present in the urine or if there is general lymphadenopathy. I have found right rectal tenderness to be a most helpful physical sign in making a positive diagnosis of acute appendicitis.

The right upper quadrant pain of gallstone colic is classical, and the diagnosis is usually confirmed by the x-ray finding of a diseased gallbladder, with calculi. The acutely inflamed gallbladder is frequently difficult to differentiate from the acutely inflamed liver of hepatitis, or the congested liver of heart failure. Here, the finding of a palpable, tender gallbladder in the former will give the confirmatory evidence needed. At times, if the patient is distended with gas and if palpation is difficult, a slowly and carefully given warm-water enema will help relieve the distension. I want to emphasize that the enema should be given slowly and carefully, and at any unusual reaction it should be discontinued and siphonage instituted. A successful enema makes palpation of the abdomen less painful and more accurate.

Acute abdominal pain in adults that is not lo-

calized is most commonly the result of acute enterocolitis or, as it is frequently called, "intestinal flu." Likewise, the pains of acute intestinal obstruction are variable in location and severity. The characteristic variety is intermittent and colicky. If the obstruction is high or due to strangulation, the pain may be more severe than when lower in the bowel or when due to adhesive bands. In strangulation, there is not the period of relief between spasms that is seen in other varieties. At the onset of the obstruction, the pain usually starts in the area obstructed and progresses across the abdomen or to the mid-abdomen. Acute intestinal obstruction, in my present experience, is much less frequent than it was 20 years ago. I think that the decreased incidence is due to the universal use of the MacBurney incision and the discontinuance of drainage in appendectomy.

Of the severely painful types of abdominal pain that I am called upon to diagnose, perforated peptic ulcer is the commonest disease entity. Here the sudden onset of severe epigastric pain, with "board-like" rigidity, is pathognomonic. The acute pelvic conditions such as salpingitis and ruptured ectopic pregnancy are infrequently encountered in the average medical practice. In the latter condition, the rectal pressure with feeling of urgency to defecate, with no stool being present, in addition to the history and findings of an acute abdomen and developing shock help one in making an early diagnosis. In acute pancreatitis, the pain is apt to radiate through the abdomen and into the back and be somewhat less severe at the onset, but there is more accompanying shock than with the perforated peptic ulcer. A blood amylase test may be needed for differentiation, but this test must be evaluated with caution, for it has been found to be elevated in gall bladder disease, perforated peptic ulcer, after major abdominal surgery and after a few days of corticotrophin therapy. A flat film of the abdomen may show air under the diaphragm in viscus perforation and rarely in pancreatitis. In the latter case, a gas-forming organism is the cause of the pancreatitis. With the increase in age of our population, the incidence of acute diverticulitis will increase and must be considered in differential diagnosis. Fortunately, the involvement is more likely to occur in the sigmoid and descending colon. X-ray examination helps to solve the problem.

Other causes of acute abdominal pain that are infrequently seen are acute mesenteric thrombosis, acute inflammation of an epiploic appendage, acute peri-splenitis and strangulated Richter's hernia.

The patient who has vague abdominal pain or distress which is variable in frequency, severity and location is the one who gives me greatest concern. Such a person takes a great deal of time and patience as the doctor takes the history. Frequently it is wise to have more than one session of history-taking, for the patient may forget to give some important symptom or even misinterpret the doctor's questions the first time. Various emotional and environmental factors influence the patient's interpretation of the pain. The use of liquor, types of diet, certain types of activity and fatigue, either emotional or physical, may change from day to day. All of these factors may account for a variation in the patient's story.

"Cancer phobia" is not an ailment of the laity alone but also of most of the medical profession who are entrusted with the care of patients. We must consider malignancy as an etiologic factor in the patient with abdominal pain where immediate surgery is not indicated, or where we cannot make an absolutely specific diagnosis. The symptoms of upper abdominal distress, belching, sometimes nausea and occasionally vomiting, "easy filling up at meals," or various food intolerances can seldom be diagnosed specifically without recourse to complete x-ray examination of the gastrointestinal tract and gallbladder. If the patient has difficulty with marble stools, or a stool that is hard at first but loose subsequently, or an explosively loose stool with much flatus, one can be fairly certain that a functional element is present, and that spastic bowel is a part of the trouble. But this does not rule out more serious organic disease. It is in such patients that the most complete examination possible is indicated. I make it a practice to examine the stool on my glove after a rectal examination. I look for occult blood by the hematest method and have found the results to be helpful in the evaluation of the overall picture, especially if the test is negative on several successive occasions.

The majority of persons with vague symptoms, in whom the distress is variable and may be in one location today and in another tomorrow, are most frequently those whose history and behavior indicate emotional stress and strain. They may be hyperventilating at the time of examination, and this can be detected by their frequent sighing. Some of their symptoms may be reproduced if one asks them to hyperventilate voluntarily, but this still does not convince most patients that they do not have an organic disease. I recommend a gastrointestinal x-ray examination as a means of proving to them as well as to me that the symptoms are functional and not organic. I mention this because some physicians feel that by considering the symptoms important enough for an x-ray examination, one may be putting too much emphasis on them and thus may be increasing the patient's anxiety. Once the physician feels sure that organic disease is not present, he can help the patient with a positive program, and such a program is essential to his improvement.

SUMMARY

In conclusion, I should like to emphasize again the importance of a complete and thorough history, and a complete and thorough physical examination by the technic one knows best. This is to be fol-

lowed by laboratory and x-ray studies as indicated. If I am not certain of my diagnosis after checking and re-checking, I advise a period of observation. This period can be of great help in determining the cause of abdominal pain, and it is not harmful to the patient. During this interval, I obtain consultation. If the answer still is not forthcoming, I believe an exploratory laparotomy should be recommended, though we are usually very reluctant to take that step.

I have not mentioned or discussed numerous other less common disease entities which may cause abdominal pain, but have tried to stay within the confines of my subject, "My Clinical Approach," and to discuss only the problems with which I am confronted most frequently.

Surgical Aspects of Abdominal Pain

SIDNEY E. ZIFFREN, M.D.

IOWA CITY

As PHYSICIANS WE are constantly faced with the problem of pain. In the majority of instances, it is the reason the patient calls on the doctor. He can be losing weight precipitously, he can be nauseated constantly and he can be having loose stools 10 times daily, but finally, the one problem that brings him to the physician is the need for relief of pain. But pain is only a symptom. It is incumbent upon us to find its cause. In most instances, it is not too difficult to determine the cause when adequate time is available. Ordinarily, however, the patient complaining of abdominal pain must have the cause of that pain ascertained immediately.

RECENT CHANGES IN MORTALITY FIGURES

The surgeon must be acquainted with the diseases that may produce pain, if he is properly to diagnose its cause. As a part of his knowledge of disease processes, he must be aware that the incidence of disease is constantly changing. At regular intervals, therefore, we must reexamine surgical diseases to determine two facts: (1) Are surgical diseases occurring more frequently in different age groups? (2) Are we successfully meeting the challenge of the acute surgical problems? As examples, I have selected three diseases from the Vital Statistics of the U. S.:[1] appendicitis, cholecystitis and intestinal obstruction.

Figure 1 is a diagram of the deaths due to appendicitis in the United States in three yearly periods tabulated by age groups: 1937, 1947 and the latest year for which statistics are available, 1954. You will note that the death rate has dropped precipitously, and that more deaths now occur in the 60-80 year age group than in any other age bracket. The explanation for that latter fact probably is that we don't look for this disease in the aged as we do in the young. Actually, as seen in the next chart (Figure 2), the death rate in Iowa from acute appendicitis has dropped strikingly, so that in 1954 only 36 deaths occurred from this disease. This is a splendid figure.

Figure 3 points out that deaths due to cholecystitis and cholelithiasis in the U. S. have not changed much, and the mortality rate has not been changed substantially. A greater death rate does occur, however, in the later period of life, 60-80

DEATHS IN U. S. DUE TO APPENDICITIS

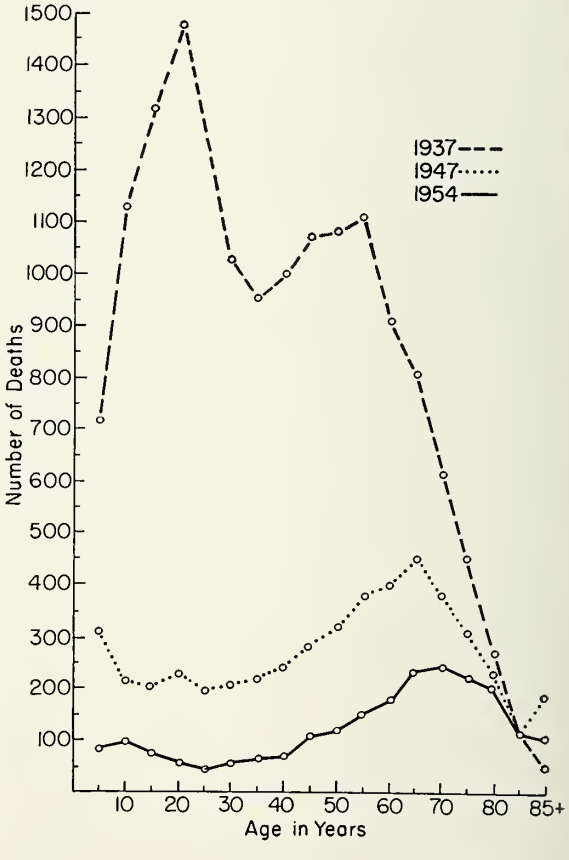


Figure 1.

Dr. Ziffren is a professor of surgery at the College of Medicine of the State University of Iowa.

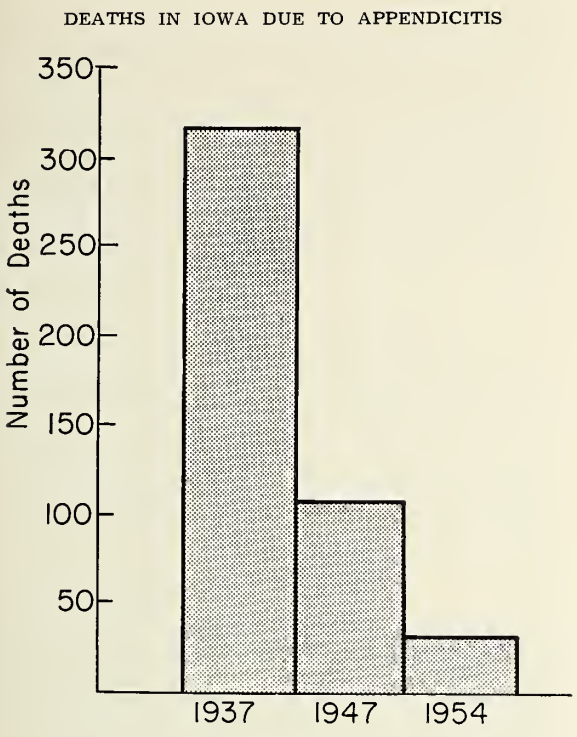


Figure 2.

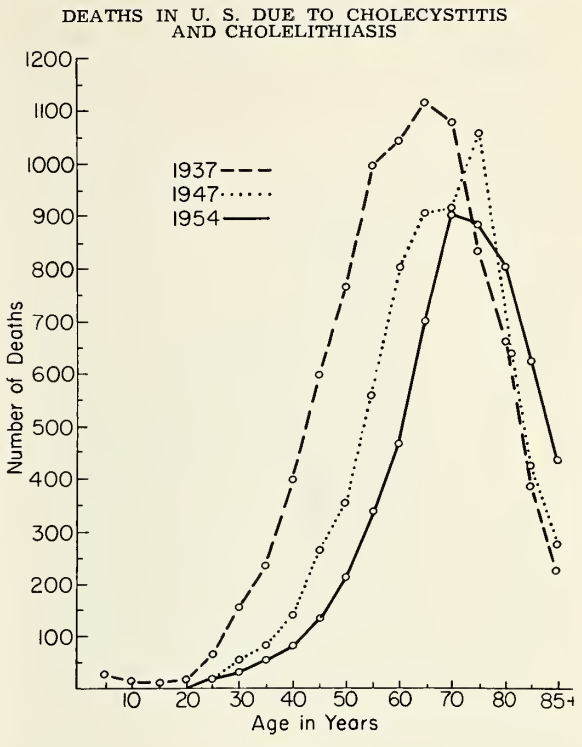


Figure 3.

years, rather than in patients 45-75 years old as in 1937.

The chart in Figure 4 concerns hernia and intestinal obstruction. These are combined because the vital statistics are tabulated together. The high figure early in life from congenital anomalies is understood. However, what is interesting is that for all practical purposes the death years haven't changed much, and the mortality rate has not been greatly lowered. It means we are not recognizing intestinal obstruction as early as we should, and we also are not operating early enough. It also means that many older people are becoming obstructed from malignancies in the large bowel resulting in death. In this connection, the next chart (Figure 5) shows what has happened with hernia and intestinal obstruction as a cause of death in this state. You will note the figure has not dropped so low as it has in appendicitis, and there remains considerable room for improvement.

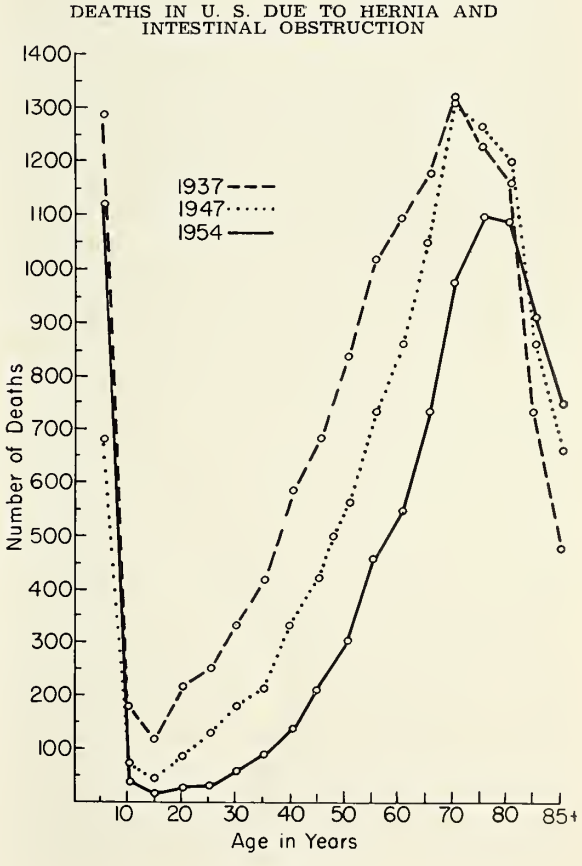


Figure 4.

LOCALIZING ABDOMINAL PAIN

It has been suggested[2] that by distinguishing splanchnic and somatic abdominal pain we may be aided in diagnosis. Splanchnic pain is the pain arising in organs which are supplied by that portion of the sympathetic nervous system. It is produced when their walls are stretched or their mesenteries pulled. This type of pain is deep and poorly localized, and it is one that the patient probably has never before experienced. The site represents the embryonic rather than the actual position of the organ in which the pain arises. If the

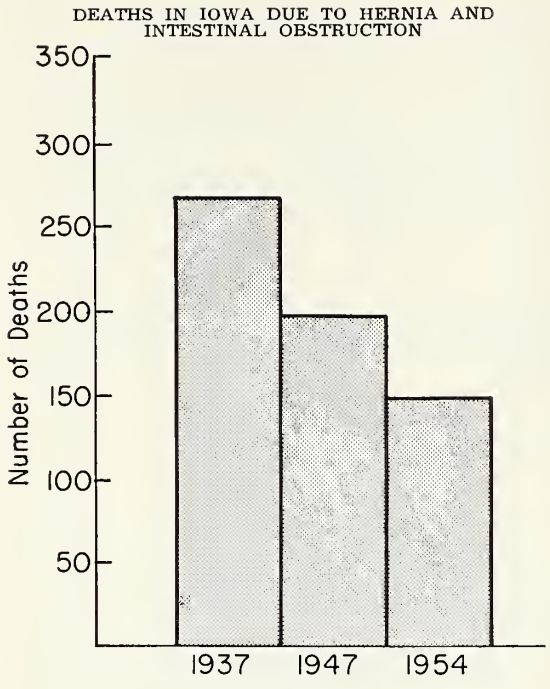


Figure 5.

lesion is in the foregut, as for example in the stomach, duodenum, liver, gallbladder or pancreas, it is felt in the epigastrium. The pain of the midgut, from the ligament of Treitz to mid-transverse colon, is felt at or above the umbilicus, and the pain in the remainder, or hindgut, in the hypogastrium. Somatic pain, however, which is supplied by the cerebrospinal nerves that supply skin and muscles and the parietal peritoneum lining the abdominal cavity, is quite accurately localized to the exact surface of the body, except in the case of the diaphragm, which is felt at its embryonic level over the shoulder. In essence, the splanchnic pain site refers to the organ involved or embryonic group to which it belongs, and may be very diffuse and covered by the palms of both hands. The somatic pain indicates the anatomical location of the disturbance, irrespective of the organ in which it arises, and may be localized with one finger. Splanchnic pain by itself is not of much value except in instances such as biliary colic with referral of the pain to the shoulder and in renal colic with referral of the pain to the testicle. Somatic pain alone may be of value in its localization. Combined, both splanchnic and somatic pain may be of help. For instance, if the pain at the start was in the epigastrium and later shifted to the right, it might point to the gallbladder or the duodenum as its source, whereas if the pain shifted to the left, it might indicate that the source lay in the stomach or in the tail of the pancreas.

The embryo physician may see fit to ask for a whole gamut of laboratory examinations and roentgenograms in his search for the cause of pain. To quiz the patient and to examine him takes time, and the ability to do so is often not learned or at times is forgotten. Today, we often see a failure to employ the free gifts of the Lord: eyesight, fingers and, last but not least, the brain. This failure is a product of our age of automation. I dare say that many a medical student has wished he could put a few facts into one of these new machines, press a button and have the answer spin out. But unfortunately, as you know, the answer cannot be obtained that easily. Medicine is not a nine-to-five job, nor is it a mechanical one, despite the frequent implications of the bureaucrats in Washington. When a patient is suffering from acute abdominal pain, the explanation must be forthcoming, whether it is two o'clock in the morning or at midday. An unfortunate fact about such pain is that it stops everything: sleep, eating, and often even thinking, as far as the physician is concerned.

MOST HISTORIES ARE ATYPICAL

No diagnosis can be made, except in an occasional instance, on the basis of the history alone. Neither can it be made on the basis of a roentgenogram alone. It, of course, is quite suggestive if the patient has typical ulcer pain or the pain of renal colic, etc. But it has been my experience—and, I believe, that of most physicians—that the patient with a typical history is quite uncommon. In most instances one has to call upon his past experiences and on his clinical acumen to arrive at a diagnosis. Anyone of reasonable intelligence may read a textbook and memorize the symptoms and signs of a presumably typical disease picture; he need not necessarily be a physician to arrive at a diagnosis under such circumstances. But the physician is the only one who can make a diagnosis in those instances in which the typical picture is not found, and the majority of such conditions are not typical. A diagnosis can be made only after the most careful history and after the most careful examination, and even then neither you nor I can be 100 per cent correct. One could talk for hours on the typical symptoms of various abdominal diseases, but what you will want to know, and what I find most difficult to convey, are those measures one can use to make sense of the usual atypical picture.

In the maze of the history which a patient may be able to give, and which he often is unable to piece together altogether coherently, we may find a clue after careful questioning. How severe is the pain? The answer may be difficult to appraise, for the necessary clinical experience often is slow in coming to a physician. Has a previous attack ever occurred? Is the pain periodic? Was it sudden, without warning, as in an ulcer perforation? What relation did it have to eating? Is it like gallbladder disease or pancreatitis, which occur usually several hours after eating and usually at night?

Was it accompanied by vomiting? What was the nature of the emesis? Has the pain changed in character, has it spread or has it changed its location? Has it been associated with chills, fainting, diarrhea or menstruation? Is it colicky, becoming more intense and recurring at progressively shorter intervals, as in small-bowel obstruction? Did it start with vomiting or diarrhea first, followed by pain, or did it start with pain? The vast majority of surgical conditions begin with pain, and other symptoms follow.

PHYSICAL EXAMINATION

We must now examine the patient. Is he writhing on the floor with pain, or rolling around from side to side in bed? A patient with peritonitis rarely does this. Instead, he will attempt to lie as still as possible because each jar exaggerates the pain. A patient with a ureteral stone will writhe. A patient with cancer of the body or tail of the pancreas may have his abdominal pain plus a boring pain in his back. He may bend over for relief. He may wrap himself around a pillow, or he may find that no position provides any relief. He cannot sleep or eat, and he may already have been visiting a psychiatrist for his psychoneurosis. It is not uncommon for the patient with biliary colic to roll about, double up or walk about pressing his hands into his abdomen. With an inflammatory process in his gallbladder, however, he will tend to lie still. The patient with volvulus of the large bowel may lie on his side doubled up, a position which provides relief of his pain by relaxing the pull on the mesentery. What is important is that we form a picture in our minds of the patient and his reaction to his pain, for that picture may suggest a diagnosis.

On palpation, we are mainly in search of three signs: mass, tenderness and/or rigidity. The mass may be a tumor, a palpable gallbladder, a collection of pus, or an irreducible mass in the inguinal, femoral or umbilical orifices. Yet if the patient is very obese, such an examination may be a failure. Rarely, one can see air in one of these regions upon taking a roentgenogram. If it is a question of intestinal obstruction, and no abdominal scar is present, the rarer sites of the buttock, loin and adductor regions must not be forgotten. Last but not least, the finger must be inserted in the rectum in search of a mass in the cul-de-sac, an actual obstructing lesion in the rectum, or exquisite tenderness in this area from a pelvic appendicitis or some other cause. We must always remember that the only rectal examination that counts is the one that the physician performs himself.

The tenderness which we ordinarily associate with an inflammatory process within the abdominal cavity may be misleading. In distention of the bowel, especially the colon, it is not uncommon for the patient to say he is tender. It is, however, not a localized tenderness, but one can evince this tenderness in different portions of the abdomen. One must always test for rebound tenderness, pressing in an area not associated with the pain to see if it produces pain in the opposite side of the abdomen.

As for rigidity, I find the most variations in concepts. It appears as if every hospital resident today finds rigidity in abdominal musculature. The art of examining for rigidity seems to have been lost. It is important, first, to be able to distinguish between true muscle rigidity due to an inflammatory process affecting the peritoneal surface, and voluntary muscle spasm which can have been created by roughness, cold hands, or even by an intrathoracic lesion. True muscle rigidity cannot be eliminated even by distracting the patient. It can also be diagnosed by continued pressure over an area. If true rigidity is not present, it will give way without an increase in the abdominal pain, whereas with an actual intra-abdominal process, increased pressure will result in an increase of pain. Actually, in examining for rigidity a light, gentle touch with the fingers is far more sensitive and accurate than a heavy hand. It can differentiate the abdominal pain and voluntary rigidity of diabetic acidosis or uremia from a true intra-abdominal lesion. It is an art that must be revived.

The examination of a child for abdominal tenderness or rigidity may be very frustrating. The simplest means is to permit the child to be held by its mother in a comforting position, with the arms and legs embracing the mother. Approaching the child from the rear, one places both hands over the abdomen, with the thumb over the posterior superior iliac spines and the fingers in the direction of the umbilicus. The left side of the abdomen should be pressed first, if one is looking for appendicitis. Then the right is pressed. Ordinarily, when the right is pressed upon, in appendicitis, the child emits a sharp cry of pain. In the few seconds available, rigidity may be detected. Ordinarily, this is the only opportunity one may have for examining the child, for now he has received warning about the doctor's intentions.

Lastly, we must not forget to use the stethoscope. In the presence of peritonitis, the abdomen is usually silent. Ordinarily, if it is quiet longer than three minutes, something is wrong. In intestinal obstruction of the small bowel due to mechanical means, the borborygmi characteristically start before the onset of the crampy pain, reach their maximum with the peak of the pain and disappear when the pain disappears, to return when another cramp occurs. Between the paroxysms of pain, there is little discomfort, except when embarrassment of the blood supply or strangulation is impending. The borborygmi are of no special significance unless they are synchronous with the pains. This picture is in sharp contrast to large-bowel obstruction, except when the lesion is in the cecum or unless the

ileocecal valve is incompetent. In these instances, a strong suspicion based upon obstipation, old age, distention and a roentgenogram showing dilated colon proximal to the obstruction will lead one to the diagnosis.

An elevated temperature may mean an infection or dead tissue, or may be related to some other process taking place at the same time, such as an upper-respiratory infection. Many urgent abdominal conditions such as appendicitis, intestinal obstruction or biliary colic in their early phases are not necessarily accompanied by an elevated body temperature. An elevated white blood count may mean infection, hemorrhage or dehydration, but again it may be absent in appendicitis, intestinal obstruction or biliary colic. The failure of white count elevation is common in the aged. A flat and upright roentgenogram of the abdomen may disclose free air, dilated loops of bowel or perhaps air in the biliary tree, as in gallstone ileus. One must remember, however, that even though at times a roentgenogram may solve the problem, for instance by displaying a ureteral stone or ballooned gut, a roentgenogram may also lead one astray from the truth. One must not permit it to diminish one's clinical judgment and thus endanger delay and court disaster.

CHOOSING PATIENTS FOR SURGERY

After gathering these facts, we may be able to make a diagnosis without hesitation. In some instances, however, we can make a decision only about whether the problem is urgent or whether it is something of only a temporary nature. If it is urgent, is it something medical, or does it require surgery? And if it is surgical, should the operation be performed now or later? At this point, clinical judgment based upon the history, physical findings and laboratory findings (if available) will provide the answer. In other instances the clinical astuteness of the physician and his artfulness in Medicine will provide the answer.

As you well know, there are a host of conditions within the abdomen that require immediate surgery. In many instances, the decision will be partially influenced by the patient's age. For instance, appendicitis is rare in infants or youngsters, common in adolescents and young people, and obviously not rare in the aged. Gallbladder disease is not common before 25 years of age, and it reaches its peak incidence in the fourth to the sixth decade. In other instances, the decision will be based upon that indefinable "something" about the patient. One may elect to observe him for several hours, watching for signs that might enable one to arrive at a diagnosis. A distinct sign may not come, but something about the patient's general condition may influence the experienced physician to decide that operation is indicated. This is the quality that cannot be taught in a textbook or in a classroom. It comes only by clinical experience and training in judgment. It warns the alert physician that something more is going on inside the patient than is revealed by the findings. This problem is much more common in the elderly, and requires that the physician establish some base line as a measure of the change that occurs in the patient. Upon observation over several hours, such a physician will note the slight change, whether it is in the patient's general appearance, in his pulse, in his temperature or in his general reaction. This will enable him to decide whether surgery should or should not be undertaken.

We must all inevitably make mistakes. We are only human. A mistake is nothing to be ashamed of, if it has not been due to carelessness or laziness, and provided that we have learned something from our error. In such fashion we can bring better care to our patients and greater satisfaction to ourselves.

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American College of Surgeons Meeting in Des Moines

The American College of Surgeons will hold one of its sectional meetings in Des Moines on March 27-29, 1958.

A news release from the headquarters of the organization says, "Dr. Ralph A. Dorner [of Des Moines] and his committee of Iowa surgeons have devised a program of paramount interest, which will include an extraordinary type of Symposium on Trauma—including clinical and photographic records of the emergency care of actual cases, a symposium on Fluids and Electrolytes, with Carl A. Moyer and a panel of experts to answer questions on this important subject, a symposium on Cancer, and one on Surgery for Congenital Lesions. Motion pictures, and papers on Cardiac Arrest, Stress Ulcers, Stress Incontinence in the Female, the Jaundiced Patient, and Gastrointestinal Tract Bleeding will also be included in the program."

The sessions will be held at the Fort Des Moines Hotel.

The Indications and Contraindications for

$Cobalt_{60}$ Teletherapy

J. V. PROUTY, M.D., AND R. C. SMITH, M.D.

CEDAR RAPIDS

SINCE WE HAVE HAD numerous inquiries from physicians and patients regarding $Cobalt_{60}$ teletherapy for the treatment of various kinds and stages of malignancy, it seems that a discussion of this subject, its indications and contraindications, would be of interest to general physicians.

Through the generosity of Margaret and Howard Hall, of Cedar Rapids, a building was constructed adjacent to Cedar Rapids Mercy Hospital and equipped with a Picker unit. Our group of radiologists was asked to operate this unit, and we have been using it in the treatment of patients since September 15, 1956. The initial response of various type of lesions will be reviewed, so that you may have some idea of our present impressions of the indications and contraindications of $Cobalt_{60}$ therapy. It is not our intention to give the results of treatment in this paper, for the number of patients has been too small, and the time interval has been too short.

DESCRIPTION OF THE EQUIPMENT

The $Cobalt_{60}$ source is 2,027 curies. This source consists of 14 discs of high density cobalt two centimeters in diameter and one millimeter thick. These discs were bombarded with neutrons for 12 to 18 months, until they became radioactive. The discs were then stacked one upon another and sealed in a tungsten capsule with a stainless steel window. The capsule is mounted on a tungsten wheel in the protective head of the cobalt unit. When the unit is in the "off" position, the source is rotated to the central portion of the head. When it is turned "on," the tungsten wheel rotates the source over the opening in the head of the unit. The size of the beam of radiation is regulated by a collimator which consists of a series of movable lead bars. The smallest area that can be treated at a distance of 80 cm. is 4 x 4 cm., and the largest area is 20 x 20 cm. By increasing the distance to 100 and 120 cm., much larger fields can be treated.

The common deep x-ray therapy unit in use today has a capacity of 200,000 to 250,000 volts. The radiation from a CO_{60} unit is in the supervoltage group, for it gives off radiation which is equivalent to the useful beam of a three megavolt x-ray unit. Another difference is that the radiation from CO_{60} is almost homogeneous, consisting of two wave lengths, whereas the radiation from x-ray units is heterogeneous, consisting of many wave lengths. The half life of CO_{60} is 5.3 years, which means that the amount of radiation in the capsule at the end of that length of time will be one-half of the original amount. Consequently, there is a necessity for increasing treatment times periodically, to compensate for the decay of the cobalt. During the decaying process, there is no change in the quality of the radiation.

ADVANTAGES AND DISADVANTAGES

The principal physical advantage of CO_{60} radiation over 250 kv. x-rays is the hardness or increased penetration of the rays. This quality facilitates the delivery of the desired amount of radiation to deep-seated tumors. There is less side-scatter of radiation, and consequently the integral dose is less. As a result, there is a decrease in the amount of radiation sickness. The skin reactions are minimal when compared with those produced by a similar amount of x-rays, for the maximum intensity CO_{60} irradiation occurs 5 mm. beneath the surface of the skin. We do see some subcutaneous lymphedema and fibrosis in those cases that have had large doses of cobalt irradiation. Because of the hardness of the cobalt rays, there is less effect on bone and cartilage and less danger of bone necrosis when one is treating lesions adjacent to bone. Another advantage of $Cobalt_{60}$ over super-voltage x-ray units is the lack of equipment failure.

LESIONS OF THE HEAD AND NECK

In general, the principal indications for $Cobalt_{60}$ therapy are deep-seated lesions and those lesions adjacent to bone. We have found it useful in lesions about the head and neck. The patients with carcinoma of the mouth, tongue and pharynx tolerate radiation from CO_{60} much better than conventional x-ray therapy. Our patients are treated daily, and we have been able to deliver a larger tumor dose with less discomfort because there is much less skin reaction. The mucositis that develops seems to be no different from the reactions we obtained from x-rays. Those of you who have seen the reactions inside the mouth and throat from large doses of radiation can appreciate the discomfort of those patients. Care must be taken not to deliver too large a dose to the spinal cord because of the danger of late sequelae. Carcinoma of the larynx can be ade-

quately irradiated, and if the lesion is not too far advanced, a good percentage of cures can be obtained.

LESIONS IN THE THORAX AND ABDOMEN

We have had very little if any more response of primary bronchogenic tumors to $Cobalt_{60}$ irradiation than to x-ray therapy. I do think that patients tolerate the treatments better, and we are able to deliver a larger tumor dose with CO_{60} irradiation. In those cases that are inoperable and not too far advanced, I believe that irradiation should be tried because of the occasional case that gets a good palliative response. We have one proved case of bronchogenic carcinoma that is well 2½ years after deep x-ray therapy. This type of response is the exception. We do not expect more than a few months of palliation in carcinoma of the lung, and that has been the usual experience of those who have used $Cobalt_{60}$ much longer than we have.

In carcinoma of the esophagus, significant palliation can often be obtained. In cases of partially obstructing lesions we have seen the reestablishment of a good-sized lumen, permitting the patient to eat and drink without difficulty. When these lesions are treated through small portals, there is practically no radiation sickness, but when the radiation reaction develops in the esophagus, there is some pain and difficulty in swallowing.

We have not treated carcinomas of the stomach with conventional x-rays for years because our results were almost always poor, and some patients told us we had made them worse.

The carcinomas of the stomach that we have treated with CO_{60} have all been advanced, inoperable lesions with metastases. The epigastric region is the worst area that we have to treat, because of radiation sickness. If the patient is in fair physical condition, we have found that he tolerates small doses of radiation without too much discomfort. To the aged or debilitated patient, we have had difficulty in giving enough radiation to do much good. One of our early patients had about three-fourths of the stomach involved by neoplasm. There was moderate loss of weight, and the patient was unable to eat because of pain. After delivery of about 4,000 r to the stomach area, there was complete disappearance of pain. The patient's appetite returned, and there was a gain of 20 pounds in weight. X-ray examination of the stomach one month after treatment showed less deformity than had been present on the original examination. The other extreme is the patient who is unable to eat after four or five treatments. He gradually becomes weaker, and treatments have to be terminated. We feel that those patients whose lesions have not metastasized too widely and who can complete the series of treatments have a fair chance of months or more of palliation.

Our experience with carcinomas of the pancreas is limited to three cases. Two patients died from distant metastases a few weeks after completion of treatments. One of them showed marked improvement of jaundice. The third patient had a cholecystojejunostomy, and she is symptom-free four months after treatment.

Inoperable carcinoma of the colon and recurrent lesions after surgery have often shown an excellent initial response to $Cobalt_{60}$ irradiation. There is a reduction in size of the tumor, relief of pain and a general improvement in the patient's physical condition. One patient with recurrence of carcinoma of the rectum with extensive soft-tissue involvement and complete destruction of the coccyx and lower one-third of the sacrum had complete relief of pain after about five treatments. In others, palpable masses have disappeared or become much smaller. These patients are very grateful that something is being done for them.

GYNECOLOGIC AND UROLOGIC CANCER

Papillary cyst adenocarcinoma of the ovary with widespread metastases and fluid have not responded as well as we had hoped. I have not been able to see much difference between their response to $Cobalt_{60}$ and to x-rays. In those cases with implants localized to the lower abdomen, it is too early to give an opinion of the ultimate results.

We have treated only one case of carcinoma of the bladder. Six weeks after treatment, there was complete disappearance of the neoplasm cystoscopically. This patient tolerated the treatment very well, with a minimum amount of discomfort.

In carcinoma of the cervix, the response to treatment has been very good. In those cases that have radium treatments, we use split fields in cobalt therapy in order to protect the bladder and rectum. When transvaginal x-ray treatments to the cervix are given, we use one large anterior and one posterior port to include the cervix. The main difference between CO_{60} and x-ray treatments in these patients is the lack of skin reactions and the reduction of radiation sickness. Also, we are able to deliver a more homogeneous and a larger dose to the pelvic lymph nodes, especially in the larger patients.

CONTRAINDICATIONS

In our opinion, those lesions in which CO_{60} treatments are usually contraindicated are skin lesions of any type because the maximum intensity of radiation is beneath the surface of the skin. We believe that the lymphoblastoma group of tumors that involve the superficial lymph nodes can be adequately treated with x-rays. If the mediastinal or abdominal lymph nodes are involved, cobalt therapy may be preferable. Cobalt

treatments are not usually indicated in widespread malignancies. We prefer to treat patients with cobalt who do not have metastases to the liver or distant metastases to the lung, etc., for the results obtained usually do not justify this type of treatment. Widespread metastases from carcinoma of the breast or prostate can usually be treated adequately with deep x-ray therapy for relief of pain. At present, we are not treating postoperative carcinoma of the breast with CO_{60} because of the lack of skin effect and the increased amount of radiation that would be delivered to the lungs. We also believe that the desired amount of radiation can be delivered to the axilla and the supraclavicular regions by means of x-rays. A few patients who have previously received x-ray therapy have been treated with $Cobalt_{60}$ for recurrence in the axillary and supraclavicular nodes with satisfactory initial response.

SUMMARY

$Cobalt_{60}$ is not a "cure all," but should be considered an improvement in radiation therapy. A large percentage of patients treated with deep x-rays or $Cobalt_{60}$ are treated primarily for palliation. We have found $Cobalt_{60}$ to have a distinct advantage in that the desired dose of radiation can often be given with opposing ports and usually with very little radiation sickness. We encourage our patients to eat well. For patients who are unable to eat because of nausea, we have found the anti-emetic medications such as Compazine, Bonadoxon, Bendectin,* etc. to be of distinct value. Many patients with inoperable carcinoma whom we have seen have been told that nothing could be done for them. It is surprising the number of these patients who improve under treatment, and they are grateful for any periods of palliation.

This brief résumé of some of the various types of lesions we have treated with $Cobalt_{60}$ and their initial response to irradiation has been given so that you may have some idea of the types of lesions in which we feel that $Cobalt_{60}$ treatments are indicated.

In conclusion, the general indications for $Cobalt_{60}$ teletherapy are primarily deep-seated lesions and those lesions that occur adjacent to bone and cartilage. The contraindications are skin lesions and those lesions near the surface of the body such as the lymphoblastomas that involve the superficial nodes. Widespread malignancies can usually be treated adequately with x-rays if irradiation is indicated.

* These three drugs are manufactured, respectively, by Smith, Kline & French, Roerig, and Merrell.

ATTENTION

County Society Officers, Deputy Councilors,
Legislative Contact Men and
Public Relations Chairmen

The annual ISMS Presidents and Secretaries' Conference will be held at the Hotel Savery, in Des Moines, on Sunday, October 20.

Watch your mail for further announcements, and make plans to attend.

Various Syndromes Associated With Visual Field Changes

P. J. LEINFELDER, M.D.

IOWA CITY

CHANGES IN THE visual fields usually represent only one of several manifestations of disease of the eye or central nervous system, but the occurrence of these changes is often of itself indicative of the precise location of the causative lesion. Certain type defects in the visual field are indicative of lesions in specific areas, and variations within these types associated with other signs and symptoms may further specify the nature of the underlying disease.

CENTRAL SCOTOMA

The central scotoma ordinarily occurs because of disease of the optic nerve or central retina. Macular degeneration, central choroiditis or retrobulbar neuritis are the usual causes for loss of central vision and the demonstration of a large or small scotoma about the fixation areas and blind spot. With this lesion there is reduction of visual acuity usually in proportion to the size of the scotoma. Small scotomata cause only slight reductions in visual acuity because the resolving power of the retina diminishes as the area of stimulation and perception is farther and farther from the fovea. However, this circumstance does not always apply, since the apparent size of the scotoma can be reduced by inaccuracy in fixation. The longer poor central vision persists, the less likely is one to outline the true size of the central defect. Often no scotoma can be outlined, even though the visual acuity is reduced to 20/200 or less. The reason is not that the patient has adapted for it by constant shifting of fixation. It is axiomatic that reduced visual acuity at the distance of the test is indicative of a central defect in the visual field, and these defects can be demonstrated if accurate fixation can be maintained.

Scotomata in the central region as elsewhere may be positive or negative. The positive are those that are visible as shadows to the patient and are the result of opacities in the refracting media or hemorrhages and other opacities in the retina. One exception to this is the scotoma that is produced by nuclear sclerosis of the lens whereby the irregular astigmatism so distorts and blurs the retinal image that the ordinary test object becomes invisible in the central three to five degrees. Such scotomata are usually smaller than the reduced visual acuity would indicate. Negative scotomata are produced by lesions of the percipient elements or nerve fibers of the retina and optic nerve. Negative scotomata have no subjective representation, although the patient may recognize that there is no vision straight ahead.

Retrobulbar neuritis and papillitis differ only in the region of the optic nerve involved in the edema-producing lesion. In papillitis the proximity of the inflammatory focus to the lamina cribosa and nerve head results in edema of the nerve head. Edema in the nerve causes pressure on the nerve fibers and interference with blood circulation. This is critical because the fibrous nature of the septa prevents swelling and increases the size of the optic nerve. Only in the papilla can the edema be relieved by swelling of the tissues, and if the inflammation is entirely intraocular, there may be no compression of nerve fibers, and in papillitis normal visual acuity may occur.

The importance of interference with the blood supply to the visual pathway is illustrated by the Foster Kennedy syndrome. Low frontal-lobe tumors cause central scotomata early, and the initial state differs little or not at all from retrobulbar neuritis. This occurs because the overlying tumor interferes with the blood supply of the optic nerve, and since the deeper-lying nerve fibers are first involved in the ischemia, the papillo-vascular bundle is first affected. Only later, with direct pressure on the nerve, does optic atrophy and blindness follow, and at the time, papilledema is present on the side opposite the lesion.

Dr. Leinfelder is a professor of ophthalmology at the College of Medicine of the State University of Iowa.

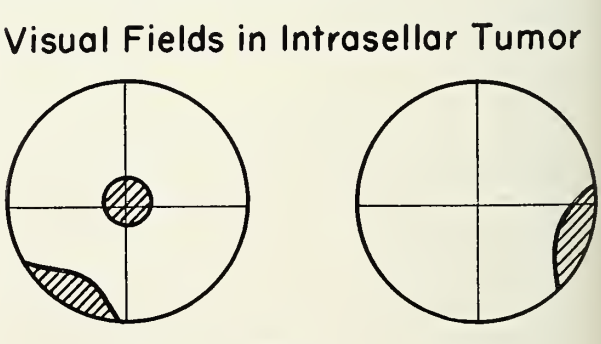


Figure 1.

TEMPORAL ANOPSIA

Changes in the temporal fields are frequently caused by tumor of the pituitary. The chromophobe adenoma, growing slowly without other manifestations, first causes impairment of the superior temporal field of one eye. This is later followed by gradually increasing defects in both eyes. The diagnosis is established when erosion of the sella tursica is demonstrated by roentgen examination. Chromophile adenoma which causes acromegaly does not ordinarily produce visual-field changes, but occasionally bitemporal hemianopsia occurs.

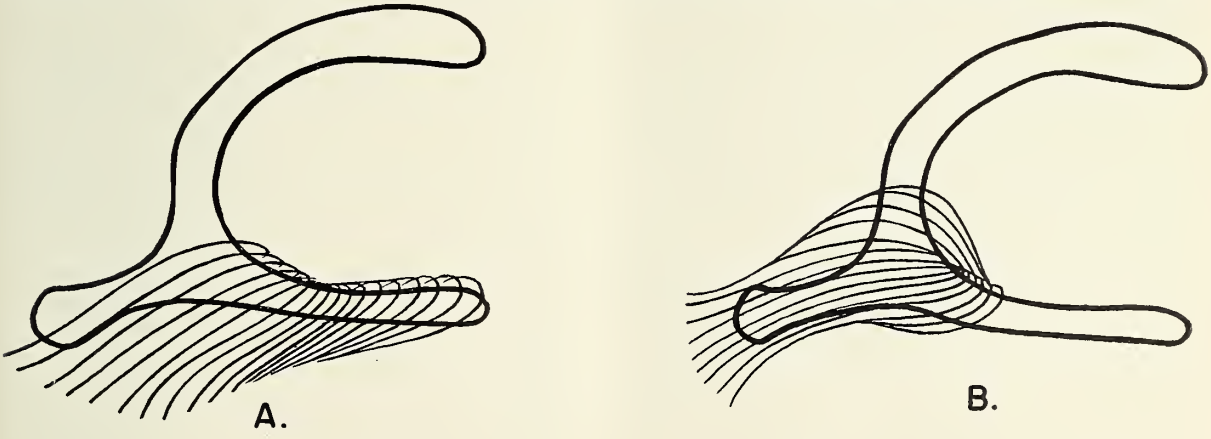
Less obvious, however, are the changes that occur in suprasella tumors. Vascular phenomena may be as important as direct pressure, so that atypical defects may be the first to appear. A central defect in the field of one eye may be the earliest evidence of a suprasellar cyst or meningioma (Figure 1). This defect is caused by interference with the blood supply of the posterior portion of the optic nerve at the chiasm. Thus, the initial state may suggest retrobulbar neuritis or the Foster Kennedy syndrome; however, if the visual fields are repeatedly studied during a period of several months, a gradual contraction is seen developing in the lower temporal quadrant on the side of the central scotoma. Shortly thereafter, loss in the periphery of the inferior temporal quadrant of the opposite eye is observed, and then definite evidence of disease in the suprasellar region is apparent.

Prechiasmal meningioma is very difficult to diagnose. This tumor arises from the folds of dura in the region immediately anterior to the chiasm. In this region, the tumor is at first adjacent to the two optic nerves, but as it develops, it grows backward and involves the chiasmatic sulcus and tuberculum sellae. The only sign is a progressive bitemporal defect that often is incongruous. Greater loss of field occurs on the side of the tumor, and complete loss of field may occur while the contralateral field shows only a partial temporal defect. A central scotoma may be the initial field defect. Since there are usually no associated signs, exploration may be necessary as a means of establishing the diagnosis. Primary tumor of the optic chiasm would produce similar visual-field changes, and its diagnosis would be dependent upon visualization at surgery.

HOMONYMOUS HEMIANOPSIA

Homonymous changes in the fields of each eye result from lesions of the visual pathway posterior to the chiasm. Hemianopsia occurs from lesions of the optic tract, lateral geniculate body, optic radiations and the calcarine area of the occipital lobe. It is usually stated that the more posterior lesions produce more similar defects in the two eyes. That observation, however, is relatively unimportant, since involvement of the optic tract is comparatively uncommon. Perhaps 80 per cent of all cases of homonymous hemianopsia are produced by lesions posterior to the lateral geniculate body.

The defects due to lesions affecting the optic radiation are partially or completely hemianopic or quadrantic in type. The quadrant loss is usually due to a lesion in the posterior portion of the temporal lobe. This is the so-called Meyer's loop syndrome. Unfortunately, many illustrations of the visual pathway grossly exaggerate the relationship of the visual fibers to the temporal horn of the lateral ventricle. Those that show visual fibers extending to the anterior tip of the temporal horn are inaccurate, since their true extent is barely over



A – Erroneous illustration of visual fibers in temporal lobe
B – Correct location of visual fibers from lateral geniculate body

Figure 2.

the atrium-temporal horn junction (Figure 2). The fibers associated with the temporal horn are components of the auditory pathway.

Hemianopic defects may be accompanied by other manifestations of brain injury. Thus, right homonymous hemianopsia may be associated with aphasia because of injury to the sensory areas for visual and auditory recognition in the left parietal lobe. Furthermore, involvement of the general sensory pathway is often accompanied by homonymous hemianopsia because of the proximity of the general sensory fibers in the posterior limb of the internal capsule to the geniculo-calcarine pathway. Sensory and motor disturbances of the arms and legs may also occur, and sometimes hemiparalysis is associated with homonymous hemianopsia. Then there is a temptation to place the lesion at the base where the optic tract swings around the cerebral peduncle and the contained motor pathway. Experience shows that the usual cause for such a syndrome is hemorrhage or tumor in the temporo-parietal lobe.

LESIONS OF THE OCCIPITAL LOBE

Sparing of the macula is often associated with disease of the occipital termination of the visual pathway. However, there are much more reliable signs of disease in the calcarine area that can lead to more precise information concerning the position and type of lesion. Macular sparing is a component of the hemianopsia produced by occlusion of the posterior cerebral or calcarine artery because these arteries supply all of the visual cortex except that at the tip of the occipital lobe. Since this represents the macular area, it is spared, and if the lesion is bilateral, all the field except the central 10 degrees is destroyed. Similarly, injury to the tip of the occipital lobe destroys the central vision in the homonymous central field of the opposite side. In other unilateral lesions of the occipital lobe, macular sparing may or may not occur. Lesions of the anterior part of the calcarine cortex of the occipital lobe exclusively affecting the more peripheral portions of the visual pathway would produce such sparing because the posterior pole of the occipital lobe is not involved (Figure 3A). Involvement of the entire occipital lobe—as by extirpation—may or may not be accompanied by macular sparing. This, however, also applies to homonymous hemianopsia from lesions in other areas besides the occiput, and even to bitemporal hemianopsia. The explanation is not known.

Occipital-lobe lesions frequently result in partial defects of the visual fields—particularly in the early stage of tumors because localized regions of the calcarine cortex are involved (Figure 3B). Thus, homonymous scotomata occur. When lesions in the midline between the occipital lobes grow to larger size, the midline may be crossed and compression of the visual area on both sides may occur. Then, oblique or some form of bilateral homonymous defects are demonstrated (Figure 3C). This can occur only when there is a midline lesion between the occipital lobes.

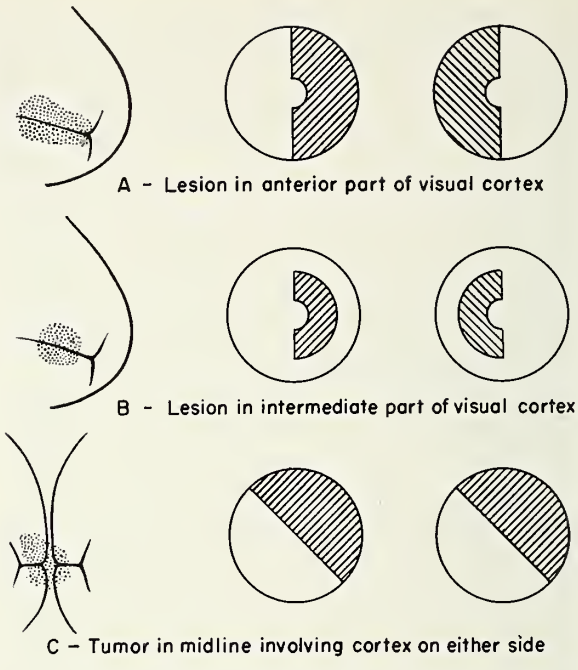


Figure 3.

SUMMARY

Visual-field defects of a typical nature are diagnostic of lesions in specific areas of the visual pathway. Atypical defects can be helpful in establishing diagnosis if one is cognizant of their occurrence as syndromes associated with intracranial disease.

COURSE IN OBSTETRICS & GYNECOLOGY AT IOWA CITY

On November 8 and 9, a short course in obstetrics and gynecology at the S.U.I. College of Medicine will be sponsored by the Iowa Obstetrical and Gynecological Society and the Division of Maternal and Child Health of the Iowa State Department of Health. It will be of particular interest to specialists, but will also be attractive to the general physician who does clinical work in those fields.

Three outstanding guest speakers have been secured: Dr. Nicholos Eastman, professor and head of obstetrics at Johns Hopkins; Dr. Duncan Reid, professor and head of obstetrics at Harvard Medical School; and Dr. Stewart Taylor, professor of obstetrics at the University of Colorado. There will be a series of panel discussions, lectures, case presentations, ward rounds and demonstrations. The topics to be discussed include placental insufficiency, anoxia, afibrogenemia and amenorrhea.

State University of Iowa College of Medicine

Clinical Pathologic Conference

February 13, 1957

SUMMARY OF CLINICAL FINDINGS

A 14-MONTH-OLD MALE white child was admitted to the Pediatric Department with the complaints of pallor, edema and episodes of dyspnea.

The patient was the result of a full-term, uncomplicated pregnancy. His birth occurred in this hospital, and it was described as normal. The neonatal period was uneventful, and until the onset of his illness, his developmental pattern had been within normal limits.

The child's history was unusual in that he had always preferred a milk diet. Reasonable efforts to introduce solid feedings had failed. For two months prior to admission, he had taken no more than one tablespoon of solid food a day. No vitamin supplement had been given.

The parents were unaware that a health problem was present until the child was nine months of age. At that time he had the onset of symptoms suggesting a severe coryza. During the following days, he became listless and pale, and had the onset of episodes when he cried, became cyanotic, threw back his head and, on occasion, became unconscious. Because these signs of disease progressed in severity, the child was taken to a physician at 10 months of age.

The presumptive diagnosis of chronic infection was made. Sulphadiazine therapy was given for several days, but no improvement was noted. Later that month, the boy was reexamined by his physician. A hemoglobin of 7 Gm./100 ml. was recorded, and as a result, "iron and liver" therapy was started. A mild peripheral edema was present, so the child was "digitalized." Because of these progressive signs of disease, the child was referred to a consultant, who confirmed the physical and laboratory findings. The consultant was the first to hear a heart murmur, and a roentgenogram taken by him showed the heart to be enlarged. No specific diagnosis was made, and no change in therapy was suggested.

Concurrent with therapy, a gradual improvement occurred during the following weeks. The child was taken to a chiropractor who recommended that all medication be discontinued. Improvement ceased, and the child's health worsened. The edema progressed from the feet to become generalized. On four or five days prior to admission, the patient had an increase in thirst, and he was described as having been very irritable and without appetite.

At the time of admission, the child had a severe pallor, a generalized pitting edema and the appearance of chronic illness, and he was extremely irritable. His physical growth was within normal limits. He could sit up, but seemingly because of weakness, he could not pull himself into an upright position. A Grade II systolic murmur was heard over the entire precordium. No valid blood pressure was obtained. There was a suggestion of fullness in the upper right quadrant of the abdomen. The feet were described as being "twice their normal size."

The parents indicated concern about leaving the baby in the hospital. They said that for several weeks it had been necessary for them to hold him much of the time to prevent crying and subsequent cyanosis.

At the time of admission, the infant's hemoglobin was 11.7 Gm./100 ml., the white blood cell count was 9,900 per cu. mm., and the differential count was normal. The child was anuric during his hospital stay. The blood urea nitrogen was 20 mg./100 ml., the creatinine was 1 mg./100 ml. and the total cholesterol was 97 mg./100 ml. The serum sodium was 142 mEq./L. and the potassium was 5.1 mEq./L. The total serum protein was 5.1 Gm./100 ml., with an albumin-globulin ratio of 4.1 to 1.1.

During the early morning of the day after his admission, the child started to cry, became frantic, could not be consoled and was severly cyanotic. By noon-time, this hyperactivity had been replaced by weakness and listlessness. A roentgenogram of the chest was obtained, and an electrocardiogram was recorded. In the early afternoon, his color was described as "ashen," and he was marginally responsive to noxious stimuli. Cedilanid, 0.25 mg., was given intravenously over a 15-minute period, and a multi-vitamin preparation was given intravenously also. Slight improvement in alertness occurred, with recurrence of the frantic movements of the hands. In consequence, 0.5 mg. of morphine was given.

At approximately 2.30 p.m. the child had a brief, generalized tonic convulsion, and he expired 30 minutes thereafter.

CLINICAL DISCUSSION

Dr. J. C. MacQueen, Pediatrics: I am sure that after reading the protocol you have come to the conclusion that this patient had some form of cardiac disease. You are aware that one of the examinations in the evaluation of the patient with

cardiac disease is the roentgenographic examination. We are fortunate in having on our staff Dr. E. F. VanEpps. With his background in pediatrics and pediatric cardiology, he is a principal member of the cardiology team. This afternoon we have asked him to present the discussion of this case.

Dr. Eugene VanEpps, Radiology: This may be the last time, as well as the first, that a radiologist is asked to do this job.

For nine months, aside from being a poor eater, this child was considered normal. A diet of milk alone, with no vitamin supplement, can produce anemia, as we know, and if the anemia is severe enough, it can produce dyspnea. At nine months, he had symptoms suggesting a cold, he became listless and pale, and he had episodes in which he cried, threw his head back and became unconscious. His parents apparently did not consider those symptoms serious, for it took them a whole month to decide to take him to a physician. The physician made a presumptive diagnosis of infection, for which sulphadiazine was given for several days.

Here, I'd like to interject something about sulphadiazine which you may or may not know. It has been held responsible for sensitizing an individual, or being the sensitizing agent for the development of angiitis which may involve the pulmonary, the renal or the coronary vessels.

Now, anemia was found. We don't know whether it was secondary anemia, and erythroblastic anemia secondary to leukemia, or what type it was. No other statement was made as to the findings of the red cells, the white cells and the smear. The consultant found the same things that the home physician found—an enlarged heart plus a cardiac murmur. No diagnosis was made at that stage, and I haven't made one either.

The child improved under medical therapy and was taken to a chiropractor, who took him off his medication, following which the child became progressively and steadily worse. When the child arrived here, he had severe pallor and generalized pitting edema, he was irritable, and he appeared chronically ill.

Whatever the disease process was, it didn't interfere with his growth, for the protocol states that his growth was average. A Grade II systolic murmur was found by the consultant. Now a Grade II systolic murmur is not significant of anything, so far as I'm concerned. It does not mean that this child had congenital heart disease with an intracardiac shunt of other defects. This may be due to dilatation from non-specific causes.

The liver was probably enlarged, since there was a suggestion of fullness in the right upper quadrant. The feet were two times normal size. Now, is this a nutritional form of edema, is it a cardiac type of edema, is it due to nephritis, or is it due to venous or lymphatic obstruction? I think we can rule out nephrosis, and nephritis at least with nitrogen retention is improbable since the chemical studies are not indicative of any significant nitrogen retention.

The child was anuric during his short stay here. Not only did he pass no urine, but I think it is reasonable to assume that none was obtained from him.

A chest film was taken and an EKG was done, but they weren't reported in the protocol.

I think that some importance can be attached to the child's "frenzy." The crying episode and cyanosis that he had after admission to this hospital suggest to me that he had severe anoxia. Now was this central, cardiac or pulmonary anoxia? Arterio-venous fistulae in the lungs, pulmonary hypertension, diminished blood flow resulting from pulmonic stenosis, though the flow may have been sufficient until a patent ductus shut itself off—any of these could have produced some of the pulmonary changes. What about anomalies of the central nervous system? There are no signs of them in the protocol. There was no evidence of intracranial pressure. As for the pulmonary changes that might produce anoxia, I should like to ask Dr. Gillies whether there was anything in the chest film that would indicate any abnormality in the pulmonary tree itself. Then, I should like him to tell us about the heart size, contour and configuration.

Dr. Carl L. Gillies, Radiology: Unfortunately, we were unable to locate the x-ray films on this patient. Thus, since I can't show the films, I'll do the next-best thing, which is to read the report which was made on them. Opportunely, it was written by Dr. VanEpps: "PA and lateral films of the chest displayed considerable cardiac enlargement without evidence of pulmonary congestion or enlargement of the liver. The contour appears more than that of left ventricular enlargement, but both ventricles are undoubtedly enlarged as well. The vascular pattern extending outward from each hilum peripherally appears considerably attenuated and suggests to me the presence of pulmonary vascular disease. Peripheral emphysema of a degree insufficient in my opinion to produce the narrow, attenuated vascular tree is present. No infiltrations are present. No osseous lesions are seen. MR r.0, ML 7.9, transverse 17, Danzer ratio .70. Impression: Extreme cardiac enlargement with diminutive vascular pattern peripherally in the pulmonary tree. Cardiac enlargement has been thought to be due to fibroelastosis. I doubt the presence of a tumor. Probably pulmonary vascular disease."

Dr. VanEpps: That helps, doesn't it? You know, it's said that the national emblem of radiologists is the hedge flower. We'll go on from there.

Now, what are the conditions that are likely to produce cardiac enlargement in infancy and childhood? The ones that I have written down first have to do with hypoplasia of the left coronary artery or an ectopic coronary artery arising from the pulmonary artery; glycogen storage disease;

medial necrosis of the coronary artery; endocardial fibroelastosis; and interstitial myocarditis. There are some congenital lesions which produce cardiac enlargement as well. One that we have seen here very rarely is a persistent atrial ventricular canal. That lesion and myxoma of the left atrium are two that, as far as the murmurs are concerned, could well have been present in this child. Sulfa poisoning, potassium deficiency or a vitamin deficiency such as beri-beri could have accounted for the cardiac enlargement. Most of these conditions give evidence of left ventricular hypertrophy on an electrocardiogram.

Cardiomegaly has been reported in several bizarre conditions, and when you're faced with such a problem as has been handed to me, you delve into all of the possible causes of cardiac enlargement. I came across an article in which cardiomegaly was reported to have occurred in association with arteriovenous fistulae of the brain. With lesions of that sort, infants usually die before reaching five or six months of age. One child, however, lived to four years of age, and in his case arteriovenous fistulae of the brain were the cause of cardiomegaly. Subacute bacterial endocarditis can also cause persistent cardiac enlargement, yet this child apparently had no sign of infection.

The edema in this child seems to me most difficult to account for. Did this child have peripheral pulses? I don't think that point is particularly important, but I should like to ask the question.

Now, let's discuss each of the possibilities that I have listed. *Glycogen storage disease* usually produces symptoms in children between two and six months of age. Onset of symptoms beyond 18 months of age is extremely rare. In many instances one finds a sibling with the same disorder. Despite a considerable enlargement of the heart, an absence of congestive failure is common. From the roentgenogram and physical examination, this child apparently had no evidence of congestive failure as far as the lungs, the pulmonary vasculature or the liver were concerned.

Aberrant left coronary artery. This ordinarily has the onset of symptoms between two and six months of age, usually with an associated tachycardia. There is respiratory distress, with cyanosis and usually a great deal of perspiration, when the child is fed or engages in any other activity that increases his need for cardiac output. Pallor may be present as well. Also in this entity there ordinarily is an absence of congestive failure. There is ordinarily a bulge in the left ventricle. I interpreted this child's chest film as indicating left ventricular hypertrophy. As you can well imagine, if there is severe embarrassment from the coronary artery's failure to supply the left ventricular area satisfactorily, there is going to be ischemia, there is going to be fibrosis, there is going to be replacement by fibrous tissue, bulging and, of course, an aneurysm there. These may be all the signs that one would associate with a coronary occlusion or cardiac insufficiency. Clinically these individuals have been described somewhat as follows. The child will be cooing, playing and having no problem at all, and then suddenly he will have this extreme, frantic difficulty in breathing, will become very much agitated and will throw himself about and even go into convulsions in the way that this child did. That is the striking picture that one has to consider particularly in this individual, as far as I am concerned.

We don't know that death will occur immediately in all cases, for several have been reported as late as 30 years of age with an aberrant left coronary artery. The determining factors are the amount of collateral circulation from the right side and, apparently, the pressure within the pulmonary artery.

Medial necrosis of the coronary arteries. We mentioned earlier that sensitivity to one of the sulfonamides may produce an angiitis which can attack the coronary artery. The onset of this disease, as such, ordinarily occurs in less than three months. It involves, however, the pulmonary and the renal vessels as well. Too, there is evidence of systemic disease, especially in the kidneys. This child did have anuria in the short time that he was here. There are associated congenital anomalies as well, and there is an absence of congestive heart failure in this type of patient.

Idiopathic myocarditis. This ordinarily occurs after six months of age. There are abnormal heart sounds, but not necessarily murmurs. Congestive heart failure occurs, and there is ordinarily a response to digitalis. The outlook in this type of condition is better than in any of the others.

Subendocardial fibroelastosis cannot be distinguished clinically from idiopathic myocarditis; perhaps it cannot be differentiated electrocardiographically; and certainly it cannot be differentiated radiographically. Thus, we are unable to separate those two.

So, what do we have in this individual? I have spent considerable time trying to make up my own mind, and I should like us to have Dr. Theilen's evaluation of the electrocardiogram. Maybe he can help us.

Dr. Ernest O. Theilen, Internal Medicine: The electrocardiogram was definitely abnormal in this case. First of all, at 14 months of age a child will usually have some electrocardiographic evidence of right ventricular preponderance. This child did not. Instead, the R waves were of the adult type in all leads except V_3 and V_4, where there were QS deflections. The T wave was inverted in V_6—an abnormal occurrence even in a child, and one that can be associated with left hypertrophy or some primary myocardial disease. In this case, the tracing was not diagnostic of left ventricular hypertrophy, and one might consider the T-wave inversion over the left ventricle as due to any of

several rare disorders, among them an aberrant left coronary artery, myocardial fibrosis, glycogen storage disease and other rare myocardial degenerative processes.

The QS deflections in V_3 and V_4 are striking, and if seen in an adult they lead one unhesitatingly to diagnose the case as transmural myocardial infarction. One is extremely reluctant to make such a diagnosis in a 14-month-old child, however, although it is not unheard of. Occasionally one sees QS deflections over the right precordium as a result of variations of the electrical position, but there is no reason for our supposing that anything of the sort is the explanation in this instance.

I think I'll stick my neck out a bit and say that this is definitely an abnormal electrocardiogram, and that it is compatible with myocardial fibrosis, possibly from an aberrant left coronary or medial necrosis of the coronary artery.

Dr. VanEpps: Well, here are two different people arriving at somewhat similar impressions from different standpoints. Now, I'm willing to stick my neck out here and say what I think Dr. Stamler will have found at autopsy. First, I believe that autopsy will have shown that this child had a dilated heart indicative of any one of three conditions. That's as far as I can go. I lean towards anomalous left coronary artery arising from the pulmonary artery, but I cannot exclude the possibility of medial necrosis of the coronary artery. The other two conditions are endocardial fibroelastosis and myocarditis. I doubt that there were any AV fistulae of the brain present in this individual, and I doubt that there were any intracardiac defects such as a ventricular or an atrial defect. I still cannot explain to my own satisfaction, from the data that have been presented, why this individual had peripheral edema. There was certainly no evidence that he had congestive failure as far as the lungs were concerned at the time they were examined.

Dr. George E. Perret, Neurosurgery: Why was the child anuric? Does the anuria have anything to do with the edema?

Dr. MacQueen: I have no answer. The record shows only that no specimen was obtained, and it was the impression of those working with the child that he was completely anuric. On the other hand, we were very well aware of the difficulties in collecting a urine specimen, and it is quite possible that this child did urinate.

Dr. William B. Bean, Internal Medicine: What was the clinical diagnosis?

Dr. MacQueen: The possibilities with which the examiner was concerned were very much the same as those that Dr. Van Epps has listed: necrosis, congenital heart disease, beri-beri heart and cardiofibroelastosis.

Dr. Frederic W. Stamler, Pathology: At autopsy, the pertinent findings were those concerned with the heart. The heart weighed approximately 2½ times the normal for a child of this age and development, and it was greatly and symmetrically dilated. It was the prosector's opinion at the time of autopsy that the heart displayed the findings of subendocardial sclerosis or fibroelastosis, along with tremendous hypertrophy.

When the microscopic sections of the heart were examined, it was found that in addition to the subendocardial sclerosis, there was a rather widespread and intensive interstitial myocarditis. I think we should consider the endocardial disease as a part of, or secondary to, the myocarditis. I believe that this was primarily a case of interstitial or isolated myocarditis.

There were other findings, including generalized edema, visceral congestion and fairly conspicuous pulmonary congestion. No renal lesion associated with anuria was found. The kidneys were essentially normal, aside from a few small foci of calcification in the collecting tubules, and that is not an unusual finding in an infant or other individual who has had an infectious disease or some other debilitating process. There was urine in the bladder at autopsy, and the BUN was not elevated.

This gross photograph of the heart shows principally the endocardial surfaces of the left ventricle and a portion of the right ventricle. The left ventricle shows the whitish, rather opaque appear-



Figure 1. Gross photograph showing left ventricular hypertrophy and dilatation, with fibrosis of subendocardium and inner zone of myocardium.

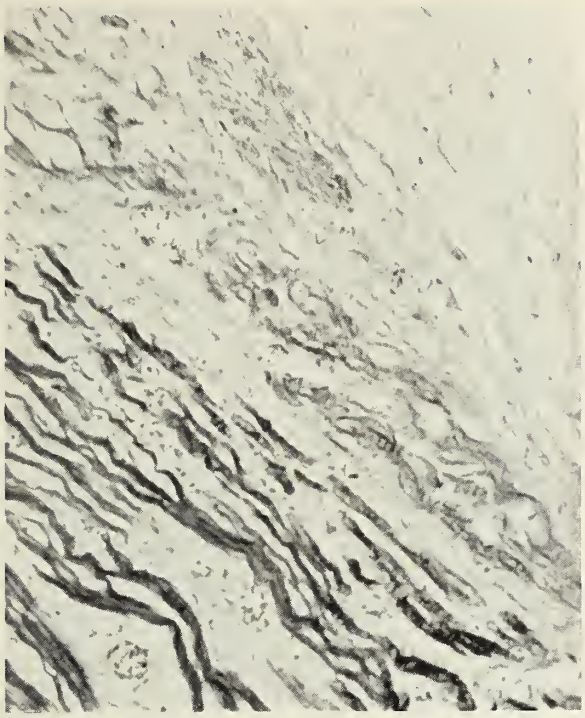


Figure 2. Microphotograph, ventricular wall, Trichrome stain, showing fibrosis of inner zones.

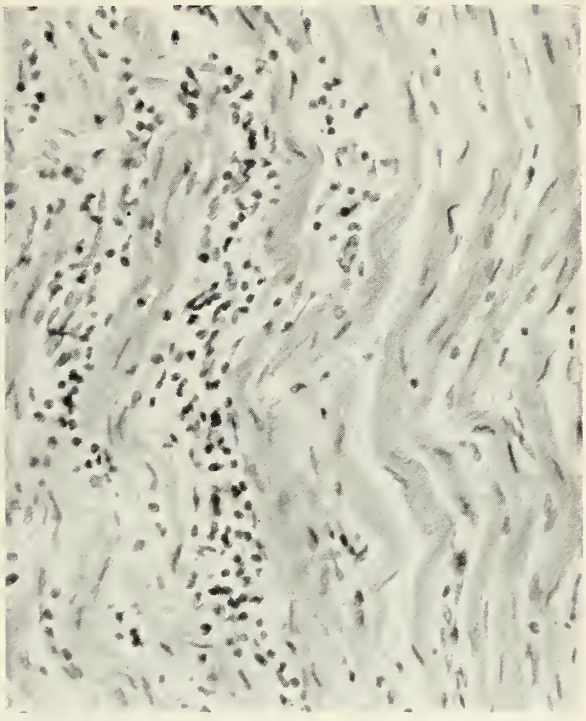


Figure 3. Microphotograph, cellular inflammatory exudate in ventricular myocardium.

ance of the endocardium, and also the cut border demonstrates the very pale appearance of the inner portion of the myocardium, as compared with the reddish appearance of the remainder, indicating the fibrosis which involved the subendocardial layers and extended for a considerable distance into the myocardium.

A higher magnification of a portion of the left ventricle shows the hypertrophied muscle and in some areas subendocardial sclerosis, with considerable sclerosis in the inner portion of the myocardium.

The myocarditis is characterized by a rather high grade inflammatory reaction of the myocardium in all portions of the heart, particularly of the ventricles, with an interstitial exudate in which mononuclear cells make up almost the entire cellular component. Lymphocytes, plasma cells, some mononuclear phagocytes, and cells which are probably proliferating fibroblasts are present. There is some generalized sclerosis of the myocardium, although it is not very pronounced.

The next photograph shows an area with very little active inflammation, and yet there is evidence of considerable myocardial disease. First of all, the muscle fibers are hypertrophied, the nuclei are greatly enlarged and hyperchromatic, and many of them are distorted in shape and appearance. There is considerable increase in the interstitial tissue, with edema but very little cellular infiltrate. I might say that this was a rather unusual area, particularly with regard to the ventricular myocardium. Most areas showed much more cellular infiltrate.

A section of atrial wall showed a tremendous thickening of the subendocardium. The atria normally have considerably more subendocardial fibrous tissue than the ventricles, but even so, this section was greatly thickened. There were also some changes due to hypertrophy of the muscle, but very little inflammation was evident in this section.

A section of lung was characteristic of acute congestion due to terminal cardiac failure. The capillaries were engorged, and indeed some of them were so ballooned out that they resembled mycroaneurysms of the alveolar walls. There was also some evidence of more chronic congestion in the form of debris, and there were a fair number of phagocytes in the alveoli. There were scattered lymphocytes in the interstitial tissue, but not much evidence of pneumonitis.

The myocarditis present in this case was of the type which is often referred to as Fiedler's myocarditis, in recognition of the fact that Fiedler was one of the first to describe myocarditis as distinct from the myocardial fibrosis and ischemic necrosis associated with coronary artery disease. Since Fiedler's time, a great body of information has been collected about the various types of endocarditis and myocarditis, but we still have far too few data to permit our arriving at any satisfactory explanation for most cases.

Myocarditis is found in association with a great

many different diseases. In some cases it is the result of direct infection by bacteria or other infectious agents. In others, it is regarded as a toxic complication of an infection, such as the parenchymatous myocarditis associated with diphtheria. In still other cases, such as rheumatic myocarditis, it is regarded as a hypersensitivity reaction, and finally there remains a rather large group into which we could fit this case: non-specific, predominantly interstitial myocarditis of unknown etiology. This is often referred to as a "primary" or "isolated" myocarditis when it is not associated with obvious disease of other organs. There is often a history, however, of a previous infection of an acute nature—a respiratory infection, a gastroenteritis or some other type of acute infection which has preceded the clinical evidence of myocarditis. The myocarditis is therefore usually regarded as a complication of some type of infection. Other cases have been postulated to be on the basis of drug hypersensitivity, such as Dr. VanEpps mentioned in regard to sulfadiazine or some of the antibiotics. A great many therapeutic agents and toxic agents have been found associated with individual cases, but the proof of their positive relationship has usually been lacking.

Finally, various virus diseases have been thought to be implicated in a number of cases. Probably foremost, we should consider poliomyelitis. Several reports indicate a rather high incidence of myocarditis associated with fatal poliomyelitis. Influenza, infectious mononucleosis, mumps and some of the other common virus infections are complicated by myocarditis in lesser percentages of cases. A virus which has been receiving considerable attention of late is the Coxsackie. For instance, a recent report* records what virtually amounted to an epidemic of myocarditis in a nursery. There were 10 cases, in three of which rather extensive virus studies were done, and Coxsackie B virus was found conclusively to have been associated with this condition. I think that this is one of the few instances in which a specific virus has been implicated in such an epidemic of this type of disease.

Dr. VanEpps: Did you look at the pulmonary arteries, and was there any medial hypertrophy in any of them?

Dr. Stamler: Nothing of the sort was noted. I looked rather carefully for evidence of any kind of inflammatory reaction in the lungs. There didn't seem to be a vasculitis in the heart, either.

Dr. MacQueen: In the hospital care of children, one of the problems is that of deciding which patients would profit from having their parents stay with them in the hospital. The parents of this patient were discouraged from staying, but the course of events showed that they shouldn't have been. This case is, no doubt, an extreme example, but it causes us to think again about this important matter.

As Dr. VanEpps reviewed the case, he mentioned a clinical finding which, to me, seemed unusual, and we still haven't found an explanation for it. Why did this baby have edema? Babies with all types and degrees of congenital heart disease and cardiac inadequacy are cared for on the Pediatric Ward, yet edema as a sign of cardiac failure has been uncommon in this age group. As far as I am concerned, this child is a case apart, for he had an unusual clinical finding related to cardiac failure.

Dr. I. A. Rankin: Do the unusual dietary habits of the child have any significance in the case?

Dr. MacQueen: I think we must be cautious in evaluating the dietary history that is recorded in the protocol. Some children seem to have little interest in starting solid feedings. If the parents of such children do not encourage them, milk may remain the child's only form of food for the first six to 12 months of life. Such children merely have unusual feeding habits. On the other hand, we see an occasional child who has renal disease and needs extra fluid. He demands and prefers to drink large amounts of milk. Thus, the older child whose diet is composed primarily of milk deserves some further investigation.

Was this child's edema caused by a protein deficiency? Protein intake in a milk diet would be high. If such diets caused edema, I am sure that we would see this clinical state more often, for it is not uncommon to see children whose diets consist almost entirely of milk.

Dr. Rankin: I was really wondering whether the child's preference for milk resulted from the greater demands that the ingestion of solid food makes on the heart.

Dr. MacQueen: Yes, children with heart disease take milk and other fluids in preference to solid feedings. That, along with irritability and episodes of dyspnea, is generally characteristic of them. The clinical finding recorded in this case that is unusual is the persistence of peripheral edema.

Dr. Jack M. Layton, Pathology: Do I understand that you think this child did not have cardiac failure?

Dr. MacQueen: No, we have evidence that he had myocarditis. The pathologic diagnosis is Fiedler's myocarditis. However, the clinical history of the child does not conform with the clinical picture that is classic for that disease. Such patients have an acute episode of unexplained shock, and sudden demise follows. This child apparently had the onset of his cardiac disease when he was nine months of age, and I believe that he has had cardiac disease since that time.

Dr. Layton: With recurring bouts of cardiac failure.

* Javett, S. N., *et al.:* Myocarditis in newborn infant; study of outbreak associated with Coxsackie Group B virus infection in maternity home in Johannesburg. J. Pediatrics, 48:1-22, (Jan.) 1956.

Dr. MacQueen: With recurring bouts of irritability and dyspnea.

Dr. Layton: And failure. Otherwise, how did he get this enlarged heart?

Dr. MacQueen: Well, he had myocarditis, as is shown by the postmortem findings. The x-rays taken prior to admission did not show impressive increased cardiac size. I believe the heart was increased in size at the time of the postmortem.

Dr. Theilen: It was 2½ times normal weight.

Dr. MacQueen: Was there dilatation?

Dr. Stamler: Yes. It was predominantly muscular hypertrophy.

Dr. MacQueen: Dr. Layton, I should like to ask your concept of the causes of these recurrent episodes of myocarditis, or this chronic myocarditis.

Dr. Layton: Well, I don't know. According to my concept of the condition, the patient probably had early myocarditis, as you mentioned. I wonder whether his inability to take food was related to cardiac failure, with congestion and edema in the stomach and gastrointestinal tract. I know the internists have difficulty feeding people with cardiac failure, too. The type of response in the muscle is consistent with the five-month duration. This had been smoldering along; in some places it's acute; and in some places it's scarred out, with only fibrosis present. Experimentally, it's almost impossible to produce cardiac hypertrophy without some dilatation of the ventricle, and often times it doesn't take very much dilatation to produce an eventual hypertrophy. I believe the endocardial fibroelastosis is due to the overstretching of the heart, with subsequent fibrosis as a healing feature —again as a part of the picture of cardiac failure. Did you have any blood pressure, for example, on this child?

Dr. MacQueen: According to the protocol, one blood pressure was obtained. The difficulty in obtaining adequate blood pressures in children of this age is well known. Basically, I think we are in agreement about this case, for I too think that the patient had the onset of his cardiac disease at approximately nine months. I am perplexed as to what its cause may have been that made it so chronic. The working diagnosis of chronic cardiac disease is well supported by much of the clinical history. I should like to return to the statement that I made at the beginning of this discussion. That is to say, I believe the unusual physical finding in this case is the history of prolonged peripheral edema. We see many children who have cardiac inadequacy, but the clinical sign of edema is unusual.

Dr. Layton: But the failure due to myocarditis is not common.

Dr. MacQueen: But what is the cause of the "chronic myocarditis"? In the summary articles describing the clinical signs observed in patients with aberrant coronary arteries, and in those who have endocardial fibroelastosis, edema is not listed as a physical finding.

Dr. Bean: I disagree with you there. Certainly, as far as the recent studies show, we almost invariably find that these people have a hemodynamic state which is quite analagous to constrictive pericarditis. They may develop an enlarged liver with Pick's disease, and this may occur in children at the age of four, five and six, and although it frequently hits the newborn or the infant under the age of one year, it does affect children who are four, five, six and seven, and the hemodynamic status is that of classical congestive failure, with elevated venous pressure, chronic inflostasis and not much pulmonary difficulty. The trouble is that the blood can't get into the heart, or has more difficulty getting in than getting out, and the effect is much like that of pericardial adhesions. Thus, at least in the descriptions of the last few years, the clinical picture is one of chronic congestive failure in which edema is conspicuous. It's certainly true in adults, and it's also true in children over the age of a year or two.

Dr. MacQueen: Yes, edema is reported in the older child and adult with endocardial fibroelastosis. Endocardial fibroelastosis is not a disease entity. It may occur without explanation in children with cardiac hypertrophy, or it may occur in children in relation to the unusual stresses of congenital heart disease. In a summary article published in 1956, on the clinical signs of endocardial fibroelastosis as they appear in children, edema was not mentioned as a clinical sign. I think we should make an error if we were to leave the impression that the presence of edema in a child under two years of age suggests the diagnosis of endocardial fibroelastosis. Among older children and adults, I would agree that edema occurs.

Dr. Emory D. Warner, Pathology: If the infant under two years of age does not have edema with cardiac failure, then we have to assume one of two things, either that the infant in that age group does not have congestive failure in the ordinary sense as we see it in the adult, or that the infant with congestive failure does not develop edema.

Dr. MacQueen: I am sure that children can have pulmonary edema as a sign of heart disease, but peripheral edema is not commonly seen as a part of the clinical picture of the child in failure. On the basis of the physical examination at the time of admission, it was the clinical impression that this child did not have pulmonary edema. The roentgenogram of the chest taken just prior to death did not show pulmonary edema.

Dr. Theilen: I haven't had an opportunity to see very many of these small patients, but isn't it true that very many of these very small babies who die of heart disease—that die of heart failure —die primarily because of the respiratory complications, and they don't get peripheral edema under two years of age?

Dr. MacQueen: Children do have pulmonary edema caused by cardiac failure, but the sign of peripheral edema is not common. The physical findings of edema in this child may not be important, but I nevertheless think it perplexing and unusual.

Dr. VanEpps: There was one other manifestation which I should like to mention. Ordinarily in congestive failure, whether it be in an infant or in an adult, we see evidence in the roentgenogram. I am very glad that Dr. Bean mentioned the point, for I was about to ask him about it. I think that his explanation could well hold, for after all, the chambers are relatively rigid—dilated, yes, but hypertrophied. We've seen individuals with hearts as large as this who have certainly not had peripheral edema, and that's the point Dr. MacQueen is trying to make. In my own experience, too, this hasn't been a feature of endocardial fibroelastosis. It just isn't a common occurrence.

SUMMARY OF NECROPSY FINDINGS

Dr. Stamler: The principal finding was a diffuse chronic myocarditis of unknown etiology, with associated myocardial hypertrophy, cardiac dilatation and subendocardial sclerosis. The lungs showed chronic congestive changes indicative of prolonged left ventricular inadequacy, and there was generalized hyperemia compatible with terminal acute congestive cardiac failure.

The myocarditis was "isolated" or "primary" in that no comparable lesions of other organ systems were demonstrated to suggest associated disease states, and "idiopathic" in that no inclusion bodies or other specific anatomical findings were recognized as indicative of a specific etiologic agent.

Death was due to congestive cardiac failure resulting from chronic myocarditis of unknown etiology.

ANATOMICAL DIAGNOSES

Chronic interstitial myocarditis, cause undetermined
Subendocardial fibrosis, moderately severe
Myocardial hypertrophy and cardiac dilatation
Chronic pulmonary congestion
Acute visceral congestion, generalized
Patchy collapse, lower lung lobes, bilateral
Fatty metamorphosis, liver, moderate.

Coming Meetings

In State

Oct. 3-5	**Midwest Cardiac Clinic.** SUI, Iowa City
Oct. 25-26	**Radiology.** SUI, Iowa City
Oct. 26-27	**Annual Meeting, Iowa-Nebraska Neuropsychiatric Society.** SUI, Iowa City
Nov. 6-7	**Trauma and Fractures.** S.U.I., Iowa Ctiy
Nov. 8-9	**Obstetrics & Gynecology.** S.U.I., Iowa City

Out of State

Oct. 1-2	**Intervertebral Disc.** N.Y.U., N.Y.C.
Oct. 1-4	**American Roentgen Ray Society.** Washington, D. C.
Oct. 1-31	**Clinical Obstetrics (Harvard University).** Boston Lying-In Hospital
Oct. 1-31	**Diseases of the Chest (Columbia University).** Bellevue Hospital, N.Y.C.
Oct. 2-3	**Management of Infections.** U. of Buffalo School of Medicine, Buffalo
Oct. 2-4	**Fifth Annual Antibiotics Symposium.** Washington, D. C.
Oct. 2-4	**Twenty-eighth Annual Symposium, San Francisco Heart Association.** St. Francis Hotel, San Francisco
Oct. 2-5	**Oregon State Medical Society.** Columbia Athletic Club, Portland
Oct. 3	**California Division, American Cancer Society.** Fairmont Hotel, San Francisco
Oct. 3	**School Health.** State University of New York (Upstate), Syracuse
Oct. 3-5	**Annual Scientific Sessions, Nebraska Heart Association.** Hotel Sheraton-Fontanelle, Omaha
Oct. 3-5	**Cardiovascular Diseases.** Bowman-Gray School of Medicine, Winston-Salem
Oct. 3-6	**American Electroencephalographic Society.** Bishop's Lodge, Santa Fe
Oct. 3-6	**Practical Electrocardiography.** Univ. of Southern California, Catalina Island
Oct. 4-5	**Ann. Meeting, New England Surgical Society.** Bretton Woods, New Hampshire
Oct. 4-5	**Coronary Heart Discase.** U. of Washington, Seattle
Oct. 4-6	**First Western Occupational Health Conference.** Biltmore Hotel, Los Angeles
Oct. 6-8	**Southern Psychiatric Assn.** Nassau, Bahamas
Oct. 7-9	**Association of Medical Illustratiors.** Montreal
Oct. 7-9	**Conferences in Clinical Endocrinology, Univ. of Southern California.** Hotel Statler, Los Angeles
Oct. 7-9	**Indiana State Medical Assn.** French Lick Sheraton, French Lick
Oct. 7-9	**Obstetrics for G.P.'s.** University of Minnesota Center for Continuation Study, Minneapolis
Oct. 7-9	**Seminar on Aniseikonia & Eikonometry** (Am. **Optical Co.)** Southbridge, Massachusetts
Oct. 7-10	**American Academy of Pediatrics.** Palmer House, Chicago
Oct. 7-10	**Am. Assn. of Medical Record Librarians.** Schroeder Hotel, Milwaukee
Oct. 7-11	**Dermatology & Syphilology for Pediatricians.** N.Y.U.-Bellevue Med. Ctr.
Oct. 7-11	**Electrocardiography for Anesthesiologists.** N.Y.U.-Bellevue Med. Ctr.
Oct. 7-11	**Gynecologic Endocrinology.** N.Y.U., N.Y.C.
Oct. 7-11	**Pediatrics.** U. of Tennessee, Memphis
Oct. 7-11	**Physical & Occupational Therapy for Neuromuscular Disease.** Warm Springs, Georgia
Oct. 7-11	**Postgraduate Week, New York Academy of Medicine.** New York City
Oct. 7-11	**Surgery of Colon & Rectum.** Cook County Graduate School of Medicine, Chicago
Oct. 7-11	**Thoracic Surgery.** Cook County Graduate School of Medicine, Chicago
Oct. 7-12	**In-Hospital Review of Surgery.** U. of Nebraska, Omaha
Oct. 7-12	**Fractures & Other Traumatic Conditions (Harvard University).** Massachusetts General Hospital, Boston
Oct. 7-12	**Mechanisms of Disease.** University of Pittsburgh
Oct. 7-18	**Urology.** Cook County Graduate School of Medicine, Chicago
Oct. 7-18	**Clinical Use of Radioisotopes.** Cook County Granduate School of Medicine, Chicago
Oct. 7-18	**Electrocardiography & Heart Disease.** Cook County Graduate School of Medicine, Chicago
Oct. 7-25	**Laboratory Methods in Diagnosis of Parasite Diseases. U.S.P.H.S. Communicable Disease Center,** Chamblee, Georgia
Oct. 8	**Seventh Annual Professional Symposium, San Diego County Heart Assn. U. S. Naval Hospital,** San Diego

Oct. 9-10	**Twenty-seventh Annual Symposium, Los Angeles County Heart Assn.** Wilshire-Ebell Theatre, Los Angeles
Oct. 9-10	**Removal of Foreign Bodies From Lungs & Bronchi** (Enrollment strictly limited). U.C.L.A., Los Angeles
Oct. 9-11	**Southwestern Medical Assn.** El Paso
Oct. 10	**School Health.** University of Kansas Med. Ctr., Kansas City, Kans.
Oct. 10-11	**Intervertebral Disc.** N.Y.U., N.Y.C.
Oct. 10-11	**Occupational Medicine and Surgery.** U. of Buffalo, Buffalo
Oct. 10-12	**Canadian Psysiological Society.** Ottawa
Oct. 10-12	**National Association for Music Therapy, Inc.,** Michigan State U., East Lansing
Oct. 10-13	**Clinical Orthopaedic Society.** Meuhlbach Hotel, Kansas City, Mo.
Oct. 11	**44th Annual Mississippi Valley Conference on Tuberculosis.** Sheraton-Fontanelle Hotel, Omaha
Oct. 11	**AMA Symposium on Nutrition in Pregnancy.** University of Missouri Medical Center, Columbia
Oct. 11	**Annual Meeting, Washington Division, American Cancer Society.** Olympic Hotel, Seattle
Oct. 11-12	**Endocrinology and Metabolism.** U.C.L.A., Los Angeles
Oct. 11-12	**Society of Clinical Surgery.** Waldorf-Astoria Hotel, N.Y.C.
Oct. 12	**Midwest Regional Meeting, American College of Physicians.** Urbana, Illinois
Oct. 12	**Regional Meeting, U. S. Section, American College of Surgeons.** Urbana, Illinois
Oct. 12-13	**Hereditary Diseases of Childhood.** City of Hope, Duarte, Calif.
Oct. 13-15	**Fall Clinical Session, Maine Medical Association.** Waterville
Oct. 13-18	**American Academy of Ophthalmology & Otolaryngology.** Palmer House, Chicago
Oct. 14	**Varicose Veins.** Cook County Graduate School of Medicine, Chicago
Oct. 14-16	**Auscultation of the Heart.** N.Y.U., N.Y.C.
Oct. 14-16	**Scientific Assembly, Medical Society of the District of Columbia.** Washington
Oct. 14-18	**Acute Neurologic Problems in General Practice.** N.Y.U., N.Y.C.
Oct. 14-18	**Forty-third Clinical Congress, American College of Surgeons.** Atlantic City
Oct. 14-18	**Internal Medicine (Am. College of Physicians).** Richmond Academy of Medicine, Richmond
Oct. 14-18	**General Surgery.** U. of Oregon, Portland
Oct. 14-18	**Vaginal Approach to Pelvic Surgery.** Cook County Graduate School of Medicine, Chicago
Oct. 14-18	**American Society of Anesthesiologists.** Statler Hotel, Los Angeles
Oct. 14-19	**Dermatoses in Infants & Children.** Temple University, Philadelphia
Oct. 14-25	**Basic Principles in General Surgery.** Cook County Graduate School of Medicine, Chicago
Oct. 14-25	**Dermatology.** Cook County Graduate School of Medicine, Chicago
Oct. 14-25	**Medicine (Columbia University).** Mt. Sinai Hospital, N.Y.C.
Oct. 14-25	**Laboratory Methods in Diagnosis of Viral & Rickettsial Diseases.** U.S.P.H.S. Laboratories, Montgomery, Alabama
Oct. 14-Nov. 1	**Allergy.** N.Y.U., N.Y.C.
Oct. 14-Nov. 1	**Cerebral Palsy.** Columbia University-Presbyterian Medical Center, N.Y.C.
Oct. 15-16	**Seventh Annual Fall Refresher, Minnesota Academy of General Practice.** Hotel Leamington, Minneapolis
Oct. 15-18	**Otolaryngology.** Faculte de Médicine de Paris, Paris
Oct. 16-18	**Association of French Speaking Doctors.** Faculty of Medicine, Paris
Oct. 16-18	**Industrial Medicine.** University of Tennessee, Memphis
Oct. 16-19	**Cardiac Roentgenology.** U.C.L.A. Medical Center, Los Angeles
Oct. 17-18	**Cardiac Roentgenology.** N.Y.U., N.Y.C.
Oct. 17-18	**Heart Sounds & Murmurs in Internal Medicine.** U. of Vermont, Burlington
Oct. 17-19	**Annual Meeting, Academy of Psychosomatic Medicine.** Morrison Hotel, Chicago
Oct. 17-19	**New Technics in Psychiatric Treatment.** Philadelphia State Hospital, Philadelphia
Oct. 17-19	**Postgraduate Course, American College of Gastroenterology.** Somerset Hotel, Boston
Oct. 17-19	**Surgical Planing in Dermatology.** Tulane University, New Orleans
Oct. 18-19	**Cardiac Roentgenology.** U.C.L.A., Los Angeles
Oct. 18-19	**Central Neuropsychiatric Assn.** Hilton-Statler Hotel, Dallas
Oct. 18-20	**European Federation, International College of Surgeons.** Billroth-Haus, Vienna
Oct. 18-21	**International Society of Angiology.** Atlantic City
Oct. 18-22	**American Rhinologic Society.** Palmer House & Illinois Masonic Hospital, Chicago
Oct. 20-23	**Annual Convention, American College of Gastroenterology.** Somerset Hotel, Boston
Oct. 20-24	**Western Orthopedic Association.** Santa Barbara
Oct. 20-27	**Congress of International Society of Surgery.** Mexico City
Oct. 21-23	**Assn. of American Medical Colleges.** Chalfonte-Haddon Hall, Atlantic City
Oct. 21-25	**Clinical Bronchoscopy.** Cook County Graduate School of Medicine, Chicago
Oct. 21-25	**Postgraduate Course, American College of Chest Physicians.** Knickerbocker Hotel, Chicago
Oct. 21-25	**Biological Approaches to Internal Medicine.** Univ. of Wisconsin, Madison
Oct. 21-25	**Medical Aspects of Workmen's Compensation.** N.Y.U., New York City
Oct. 21-25	**Ninth Postgraduate Assembly in Endocrinology and Metabolism.** Medical College of Georgia, Augusta
Oct. 21-25	**X-ray Diagnosis in Obstetrics & Gynecology.** N.Y.U., N.Y.C.
Oct. 21-27	**General Surgery (49 hours).** U. of California, San Francisco
Oct. 21-Nov. 1	**Fractures & Traumatic Surgery.** Cook County Graduate School of Medicine, Chicago
Oct. 21-Nov. 1	**Office and Operative Gynecology.** Cook County Graduate School of Medicine, Chicago
Oct. 21-Nov. 1	**Practical Course in Cystoscopy.** Cook County Graduate School of Medicine, Chicago
Oct. 21-Nov. 2	**Breast & Thyroid Surgery.** Cook County Graduate School of Medicine, Chicago
Oct. 21-Nov. 2	**Gastroenterology.** Cook County Graduate School of Medicine, Chicago
Oct. 21-Nov. 15	**General Surgery.** Massachusetts General Hospital, Boston
Oct. 21-Nov. 16	**Review of General Surgery for Specialists.** N.Y.U., N.Y.C.
Oct. 23-24	**Hematology.** Frank E. Bunts Educational Institute, Cleveland
Oct. 23-24	**Adult & Pediatric Neurology.** U. of Buffalo, Buffalo
Oct. 23-25	**American Association of Medical Clinics.** Kansas City, Mo.
Oct. 23-25	**Assn. of Life Insurance Medical Directors.** Hotel Statler, N.Y.C.
Oct. 23-25	**Diagnosis & Management of Early Cancer.** Memorial Center for Cancer & Allied Diseases, N.Y.C.
Oct. 23-25	**Obstetrics & Gynecology.** U. of Tennessee, Memphis
Oct. 24-25	**Rheumatic Diseases.** Ohio State University, Columbus
Oct. 24-25	**Postgraduate Seminar.** U. of Mississippi Med. Ctr., Jackson
Oct. 24-26	**Central Assn. of Obstetricians & Gynecologists.** Hotel Sheraton-Fontanelle, Omaha
Oct. 24-26	**Symposium on Skin Cancer for Specialists.** University of Minnesota Center for Continuation Study, Minneapolis
Oct. 24-26	**Annual Postgraduate Course, American College of Gastroenterology.** The Somerset, Boston
Oct. 25-26	**Dermatology.** U.C.L.A., Los Angeles
Oct. 25-26	**Medical Society of Delaware.** Wilmington
Oct. 25-27	**Annual Meeting, California Society of Internal Medicine.** El Mirador, Palm Springs
Oct. 25-27	**Arthritis (Columbia University).** Hospital for Joint Diseases, N.Y.C.
Oct. 25-29	**Thirtieth Scientific Session, American Heart Association.** Hotel Sherman, Chicago
Oct. 27-29	**Gynecology.** U. of Texas Postgraduate School of Medicine, Houston
Oct. 27-30	**Association of Military Surgeons.** Washington, D. C.
Oct. 27-30	**Medical Society of Virginia.** Washington, D. C.
Oct. 27-Nov. 2	**Congress of International Society of Surgeons.** Mexico City
Oct. 28-31	**Applied Therapeutics.** U. of Oregon Medical School, Portland

Oct. 28-Nov. 1 **General Surgery.** Cook County Graduate School of Medicine, Chicago

Oct. 28-Nov. 1 **Clinical Gastroenterology.** N.Y.U., N.Y.C.

Oct. 28-Nov. 1 **Review of Recent Advances in Internal Medicine.** Tufts University, Boston

Oct. 28-Nov. 1 **Occupational Skin Problems.** Kettering Laboratory, Cincinnati

Oct. 28-Nov. 1 **Laboratory Methods in Diagnosis of Rabies.** U.S.P.H.S. Laboratories, Montgomery, Alabama

Oct. 28-Nov. 2 **Surgery of the Eye.** N.Y.U., New York City

Oct. 28-Nov. 2 **Internal Medicine.** Letterman Army Hospital, San Francisco

Oct. 28-Nov. 2 **Internal Medicine (American College of Physicians).** New England Center Hospital, Boston

Oct. 28-Nov. 2 **Internal Medicine.** Tufts University School of Medicine, Boston

Oct. 28-Nov. 11 **Surgical Technics.** Cook County Graduate School of Medicine, Chicago

Oct. 30-Nov. 2 **American Society of Tropical Medicine and Hygiene.** Benjamin Franklin Hotel, Philadelphia

Oct. 30-Nov. 2 **AMA National Conference on Physicians and Schools.** Moraine-on-the-Lake Hotel, Highland Park, Illinois

Oct. 31-Nov. 2 **American Assn. for the Surgery of Trauma.** Hot Springs, Virginia

Oct. 31-Nov. 2 **Aviation Medicine.** U.C.L.A., Los Angeles

Oct. 31-Nov. 2 **Gerontological Society.** Hotel Cleveland, Cleveland

Nov. 1-2 **Southern Allergy Association.** Charleston, S. C.

Nov. 1-3 **Office Management of Diseases of Metabolism (Columbia University).** Mt. Sinai Hospital, N.Y.C.

Nov. 1-3 **Cardiac Arrhythmias (American College of Physicians).** Philadelphia General Hospital, Philadelphia

Nov. 1-30 **Clinical Obstetrics (Harvard University).** Boston Lying-In Hospital, Boston

Nov. 1-30 **Clinical Traineeship in Pulmonary Disease.** U. of Kansas Med. Ctr., Kansas City, Kans.

Nov. 3-6 **Ninth Annual Scientific Session, California A.G.P.** Hotel Statler, Los Angeles

Nov. 3-9 **Pan American Congress of Pharmacy & Biochemistry.** Washington, D.C.

Nov. 3-9 **Pan American Congress of Endocrinology.** Buenos Aires

Nov. 4-6 **Gallbladder Surgery.** Cook County Graduate School of Medicine, Chicago

Nov. 4-6 **Gynecology.** U. of Kansas Medical Center, Kansas City, Kans.

Nov. 4-8 **Forensic Pathology.** Armed Forces Institute of Pathology, Washington, D.C.

Nov. 4-8 **Alimentary, Cardiovascular, Renal and Respiratory Diseases (Chicago Medical Society).** Knickerbocker Hotel, Chicago

Nov. 4-8 **Ophthalmoscopy.** N.Y.U., N.Y.C.

Nov. 4-8 **Practical Electrocardiography, Course "A."** Beth Israel Hospital, Boston

Nov. 4-9 **Cardiovascular Radiology for Specialists.** U. of Minnesota Center for Continuation Study, Minneapolis

Nov. 4-15 **Practical Course in Cystoscopy.** Cook County Graduate School of Medicine, Chicago

Nov. 4-15 **General & Surgical Obstetrics.** Cook County Graduate School of Medicine, Chicago

Nov. 4-15 **Laryngology & Laryngeal Surgery.** Temple University, Philadelphia

Nov. 4-15 **Gastroscopy and Gastroenterology.** Cook County Graduate School of Medicine, Chicago

Nov. 4-16 **Bronchoesophagology.** U. of Illinois, Chicago

Nov. 4-16 **Congenital & Heart Disease in Infants & Children.** Cook County Graduate School of Medicine, Chicago

Nov. 4-16 **Endaural Surgery.** N.Y.U., N.Y.C.

Nov. 4-22 **Mobilization of Stapes (Columbia University).** Mt. Sinai Hospital, N.Y.C.

Nov. 4-29 **Surgery of Gastrointestinal Tract (Columbia University).** Mt. Sinai Hospital, N.Y.C.

Nov. 4-Dec. 9 **Photomicrography.** U.C.L.A., Los Angeles

Nov. 6-7 **Gynecology.** University of Buffalo, Buffalo

Nov. 6-8 **Diseases of Blood and Blood-Forming Organs.** U. of Tennessee, Memphis

Nov. 6-8 **Chest Diseases.** City of Hope, Duarte, California

Nov. 7-8 **Graduate Symposium, American Geriatrics Society.** Waldorf-Astoria Hotel, N.Y.C.

Nov. 7-9 **Congress of Neurological Surgeons.** Washington, D.C.

Nov. 7-9 **Surgery of Hernia.** Cook County Graduate School of Medicine, Chicago

Nov. 8-9 **Gastroenterology.** Emory University, Atlanta

Nov. 8-9 **Otolaryngology.** U.C.L.A., Los Angeles

Nov. 11-13 **Diabetes, Hyperinsulinism and Hypoglycemia.** N.Y.U.-Bellevue Med. Ctr., N.Y.C.

Nov. 11-13 **Visual Optics & Refraction (Am. Optical Co.).** Southbridge, Massachusetts

Nov. 11-14 **Internal Medicine.** Indiana University, Indianapolis

Nov. 11-14 **Pediatric Endocrinology & Related Metabolism.** N.Y.U.-Bellevue Med. Ctr., N.Y.C.

Nov. 11-15 **Annual Meeting, American Public Health Assn.** Public Auditorium, Cleveland

Nov. 11-15 **Arthritis & Allied Rheumatic Disorders.** N.Y.U.-Bellevue Med. Ctr., N.Y.C.

Nov. 11-15 **Internal Medicine.** U. of Washington, Seattle

Nov. 11-15 **Electrocardiography.** N.Y.U., N.Y.C.

Nov. 11-15 **Hematology.** N.Y.U., N.Y.C.

Nov. 11-15 **Obstetrics, Gynecology & Pediatrics (Chicago Medical Society).** Knickerbocker Hotel, Chicago

Nov. 11-15 **Chest Diseases (American College of Chest Physicians).** Park-Sheraton Hotel, N.Y.C.

Nov. 11-16 **Investigation of Homicide.** U. of Cincinnati, Cincinnati

Nov. 11-22 **Surgical Technic.** Cook County Graduate School of Medicine, Chicago

Nov. 11-23 **Congenital and Acquired Malformations of the Heart in Infants and Children.** Cook County Graduate School of Medicine, Chicago

Nov. 12-14 **Electrocardiographic Interpretation & Cardiology.** U. of Wisconsin, Madison

Nov. 13 **Neurologic Examination and Anciliary Procedures.** U. of Indiana, Indianapolis

Nov. 13-15 **Clinical Chemistry.** Frank E. Bunts Educational Institute, Cleveland

Nov. 14 **Emotional Problems in General Practice.** U. of Indiana, Indianapolis

Nov. 14-22 **Pan-Pacific Surgical Association.** Honolulu

Nov. 15-17 **Annual Symposium, Los Angeles County Hospital Society of Graduate Internists.** Hotel Statler, Los Angeles

Nov. 15-16 **Otolaryngology.** U.C.L.A., Los Angeles

Nov. 18-19 **Varicose Veins.** Cook County Graduate School of Medicine, Chicago

Nov. 18-20 **Gonioscopy & Glaucoma.** Brooklyn Eye & Ear Hospital, Brooklyn

Nov. 18-20 **Physical Medicine for Specialists.** U. of Minnesota Center for Continuation Study, Minneapolis

Nov. 18-22 **Electrocardiography & Treatment of Arrhythmias.** Mt. Sinai Hospital, Miami Beach

Nov. 18-22 **Clinical Bronchoscopy.** Cook County Graduate School of Medicine, Chicago

Nov. 18-22 **Cardiovascular Disease.** National Institutes of Health, Bethesda, Maryland

Nov. 18-22 **Inter-American Congress of Pan American Medical Assn.** Mexico City

Nov. 18-22 **Peripheral Vascular Diseases.** N.Y.U.-Bellevue Med. Ctr., N.Y.C.

Nov. 18-22 **Practical Management of Psychiatric Problems (Columbia University).** Mt. Sinai Hospital, N.Y.C.

Nov. 18-22 **Surgery of Colon & Rectum.** Cook County Graduate School of Medicine, Chicago

Nov. 18-23 **Review of Clinical Pediatrics.** N.Y.U.-Bellevue Med. Ctr., N.Y.C.

Nov. 18-Dec. 2 **Pacific Science Congress.** Bangkok, Thailand

Nov. 20 **Medical & Surgical Emergencies (Ohio Academy of General Practice).** Commodore Perry Hotel, Toledo

Nov. 20 **Diabetes Mellitus.** Drake Hotel, Chicago

Nov. 20-21 **Dermatology.** U. of Buffalo, Buffalo

Nov. 20-22 **Physiologic Basis of Hematology.** City of Hope, Duarte, California

Nov. 22-23 **AMA Conference on Mental Health.** Drake Hotel, Chicago

Nov. 22-25 **Eighth Annual Postgraduate Seminar.** Mt. Sinai Hospital, Miami Beach

Nov. 23 **Fall Medical Refresher, U. of Illinois.** Professional College Campus, Chicago

Nov. 25-27 **James C. Kimbrough Urological Seminar.** Brooke Army Medical Ctr., Ft. Sam Houston, Texas



THE ELEVENTH HOUR

During the first session of the 85th Congress, grass-roots sentiment for economy and the fight over the civil rights issue necessitated the postponement of action on any of the perennial proposals for socialization of medical services. But the second session of this Congress, which will open in January, isn't likely to be so pleasant for those of us who are interested in the preservation of free enterprise in the health care field.

The "Month in Washington" column in this issue of the JOURNAL describes the most dangerous of the bills that will be considered in Congressional committees this winter. The enactment of any one of them would constitute a long and disastrous step toward the establishment in America of the system of state medicine with which physicians in England have been burdened.

As most of us feared it would, Medicare has served as a pattern for the new assault. The system under which dependents of servicemen are provided hospitalization, surgery, obstetrics and in-hospital medical care by civilian doctors at federal expense can logically be extended, we are told, to all other federal employees and to the recipients of Social Security benefits.

All of us should bear in mind that a very considerable portion of the American people are on Uncle Sam's payroll, so that if these proposals become law, federal medicine for all of our people will have come very much nearer accomplishment. This one, indeed, might very well be the decisive step.

The AMA has already assembled a task force to lead the defense. It is a special committee, of which Dr. G. M. Fister, of Ogden, Utah, is chairman, and Dr. Francis C. Coleman, of Des Moines, Dr. Robert Novy, of Detroit, Dr. J. Duffy Hancock, of Louisville, and Dr. George F. Gsell, of Wichita, are members.

The committee will need a great deal of help from all of the rest of us, and though most members of the Iowa Congressional delegation—if one can judge from their voting records—seem likely to side with us on this issue, each doctor should be sure to remind his senators and his congressman of the threat that these proposals carry. This is an occasion when none of us can afford to leave the letter-writing to the other fellow.

The extension of federalized medical care would be sure to cost tremendous sums of money, and quite apart from other considerations, such a commitment would altogether prevent the tax cut to which everyone is looking forward. Besides, everyone seems to agree that the continuance of extravagant federal spending is the principal factor in the creeping inflation that is depreciating the value of the dollar by at least three per cent each year. Thus we have several powerful levers to use.

Let's each of us take a hand at this job!

FOREIGN MEDICAL GRADUATES

Through cooperative action, the organizations principally interested in the maintenance of adequate standards for medical licensure in the United States at last have arrived at a system that they think will provide a satisfactory answer to the problem of evaluating the professional (and other) qualifications of graduates from foreign medical schools. In 1950, the AMA Council on Medical Education and Hospitals, in collaboration with the Association of American Medical Colleges, began to maintain a listing of some 50 foreign medical schools whose graduates were theoretically to be considered comparable with the graduates of American schools. But for many reasons this arrangement proved unsatisfactory as a means of judging the individual graduate. Thus, in 1954, the Federation of State Medical Boards of the United States, the American Hospital Association, the Association of American Medical Colleges and the AMA formed what was called "The Cooperating Committee on Graduates of Foreign Medical Schools." After many months of deliberations, the Committee has formulated what it thinks is a workable plan.

On December 14, 1956, the name of the Cooperating Committee was changed to "The Educational Council for Foreign Medical Graduates," and the number of representatives that compose it was set at 10. Dr. Dean F. Smiley, formerly the secretary of the Association of American Medical Colleges, has become the executive director of the Council, and has set up its headquarters at the Orrington Hotel, 1710 Orrington Avenue, Evanston, Illinois.

The Council will give examinations, both in this country and abroad, to foreign medical graduates desirous of coming to the United States, either temporarily or permanently, and on the basis of those examinations it will furnish information to state licensing boards and to hospitals offering internships and residencies. It should be noted that the Council is not concerned with the *placement* of individual foreign physicians, and that it does not help them secure licenses to practice. Rather, the Council will gather data (1) to enable state boards to give their examinations to promising candidates from schools that weren't on the list of 50, and (2) to discourage foreign graduates—in many instances

while they are still in their native countries—from seeking American licenses when it is apparent from their performance on the Council's test that they will not be able to qualify. At the same time, in compliance with its stated purposes, the Council will have a responsibility to encourage foreigners to take further medical education in this country, if it seems likely that their demonstrated deficiencies are remediable.

It is not the purpose of the Council to "keep the foreign graduate out." On the contrary, it hopes, among other things, that its program will enable American hospitals to know quite a great deal about the foreign graduates who apply for internships and residencies, but do not plan to remain in this country for the rest of their lives. Principally, it intends to provide state licensing boards with data on which to make individual decisions as regards permitting or refusing examinations to foreigners.

It is anticipated that the Council will conduct its first examination before the close of this year.

DON'T SKIMP ON DIAGNOSIS

"Don't use an antibiotic until you have made sure that it is indicated or until you have made certain that the patient is insensitive to it." This was the general theme to which several outstanding authorities returned again and again, during the AAGP's First Annual Symposium on Infectious Diseases, presented by Pfizer Laboratories at the Battenfield Auditorium in Kansas City, Kansas, on September 22.

Dr. Ethan Allan Brown, of New England Hospital, recalled that when penicillin was brand new, a prominent doctor suggested in all seriousness that on a particular day the whole population of the United States should receive an injection of it, for he thought that syphilis and a host of other diseases could thus be ended overnight. Since that time, of course, the foolhardiness of such a procedure has become increasingly apparent. Nowadays, Dr. Brown declared, one person in every 20 will experience a penicillin reaction varying from a case of hives to almost instantaneous death.

Dr. Harrison C. Flippin, professor of microbiology at the University of Pennsylvania Graduate School of Medicine, pointed out some of the diagnostic clues that the physician can and should get by history-taking before beginning medication. Most cases of fever of undetermined origin, he said, can be traced to a common disease present in an atypical form. Many cases of less than two weeks' duration represent an acute respiratory infection, often caused by a virus. Those of longer duration are most frequently caused by infections such as tuberculosis, by rheumatic ailments, by neoplastic diseases, by drug toxicity, etc.

Dr. Flippin urged his hearers to talk not only to the patient but to the members of his family. Such a procedure, he said, will frequently narrow the diagnostic search. A sore throat several weeks before the onset of painful joints may indicate rheumatic fever; the valvular heart disease patient who has had a recent tooth extraction may complain of weakness; a running ear preceding the onset of a headache and a stiff neck may mean purulent meningitis.

Other clues may be found in accounts of the patient's recent activities. For example, the city-dweller who has visited the country and drunk raw milk may have risked brucellosis. Another may have been in recent contact with a tuberculosis patient. Finally, Dr. Flippin said, one should not forget the possibility that the fever is a response to a previous administration of a sulfa drug or an antibiotic. Almost any drug that is injected, he declared, may under appropriate circumstances cause a toxic reaction.

Frederick C. Fink, Ph.D., director of hospital advisory services for Pfizer, emphasized the usefulness of bacteriologic smears, particularly in the treatment of tuberculosis, urinary tract infections and enteritis. But he also stressed the importance of good susceptibility tests and warned physicians to be cautious in evaluating reports on *in vitro* performance of antibiotics.

DIPHTHERIA SUSCEPTIBILITY AT U. OF MINNESOTA

Nearly half of the new students entering the University of Minnesota in one year were not immune to diphtheria in spite of a long-time statewide program of diphtheria immunization, three researchers there have reported. They say that 47.2 per cent of 2,899 students entering school in the fall of 1954 responded positively to the Schick test.

Their study* reported in the August 24 issue of J.A.M.A., substantiates other studies which have shown a high degree of susceptibility to diphtheria in the adult population. It also indicates the need for and the safety of routine inoculation of all students entering college, they said.

The percentage of positive Schick reactions was significantly higher in those students 20 years of age and over than in those under 20 years. It was higher also for men in the age group 20-24 than for women in the same age group. The researchers noted that 42.3 per cent of the 16- and 17-year-olds were susceptible, a fact which they regarded as especially significant since most of them were Minnesotans, and had lived in areas where diphtheria immunization has long been accepted by the public and vigorously promoted by the state health department.

* Boynton, R. E., Cowan, D. W., and Rupprecht, M. A.: Immunization of college students against diphtheria. J.A.M.A., **164**:1874-1879, (Aug. 24) 1957.

President's Page

Many experiments have been made by the peoples of the world to provide medical service to more people at less cost to them. None of these experiments has offered a practical solution, and most of them have brought about deterioration in the quality of medical service.

Quality of medical service is not so closely related to costs as most people believe. Quality depends entirely upon the right of the individual to practice medicine in an environment of freedom and liberty which permits him the privilege of administering to the sick in accordance with his own determination of the need.

Misguided people who believe that through an aberration of free government, such as socialism, everyone will receive as much medical attention as he desires, or as—in his uninformed judgment—he thinks he needs, are indulging in wishful thinking. Ever since man was driven from the Garden of Eden, his dreams of returning to a paradise where everything is perfect and uncomplicated have brought him nothing but tragedy and disaster.

The quality of medical service in America today is regarded highly by all the people of our country and throughout the world. There is no objection to the quality, but we hear considerable criticism of the cost, and complaints that there are people who cannot obtain as much of it as they want, at times when they have a real or imaginary desire for it.

Physicians have a responsibility for upholding the quality of medical care and defending the principles of freedom, liberty and democracy which make it possible. However, they also have a responsibility for recognizing the complaints of the public and exploring every possible avenue of increasing medical care, lowering its cost to the public and meeting criticisms, which may be both just and unjust.

A physician cannot meet this responsibility merely by being a good doctor and a stalwart defender of the *status quo*. There cannot be progress in one field of human activity, such as medicine, unless there is accompanying progress in other fields of human activity. Blue Shield and various other forms of private health-and-accident insurance have enabled large numbers of people to purchase adequate medical care without any resultant financial hardship.

It is not unreasonable to believe that more progress can be made in that direction. Prepayment can be made available to more people, and can be made to cover more types of medical care. The physician should keep an open mind to any suggestions which do not involve a compromise in the quality of medical care and do not encroach upon the freedom and right both of the doctor to practice medicine according to his own light and of the individual to exercise free choice in selecting a physician.

Progress always calls for sacrifice and frequently for change. Doctors everywhere must be prepared to make any sacrifice that is deemed beneficial by the medical profession. Doctors who, through methods tolerated in their practice, have inadvertently or selfishly permitted justifiable criticism to be directed toward them and toward the medical profession should act now to make changes, even though such changes may adversely affect their financial status or their foolish vanity.

Fred Sternagel

President

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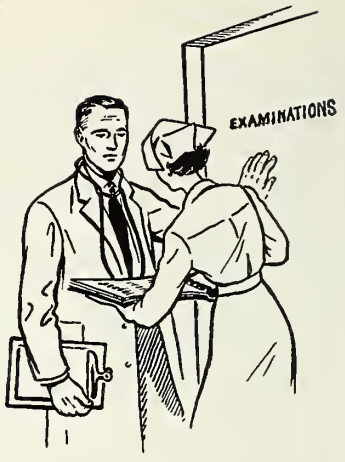
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THE DOCTOR'S BUSINESS



A Corporate Trustee to Manage Your Estate

HOWARD D. BAKER

WATERLOO

Doctors, quite like other Americans, spend the productive years of their lives accumulating capital for their retirement and for the support of their dependents in case of their deaths. All of us are aware of the difficulties involved in making such accumulations. Taxes and occasional bad investments hinder all of us to a greater or lesser degree. Since there always is a certain amount of danger that an originally good investment may turn bad, and that a still passable investment should be exchanged for a more promising one, there are plans to be changed, decisions to be made and worries to be endured.

If you were to die, would your wife be able and willing to assume those responsibilities and prevent the depletion of your estate? Even if she could, is it fair for you to expect her to do so? Many widows today would answer those questions with an emphatic "No!"

THE FUNCTIONS OF A CORPORATE TRUSTEE

More and more people today are delegating the management of their estates to corporate trust departments. What do these institutions have to offer, how do they operate, and what does their service cost?

(1) A corporate trustee will manage all or any part of your estate that you have turned over to it by will or by trust agreement.

(2) It will act as executor or trustee of your estate, assuring prompt action and proper know-how for best results.

(3) At all times, it will keep available funds fully invested to produce maximum yield and safety.

(4) Changes in investments will be accomplished without worry or responsibility to your beneficiaries.

(5) Your estate will be in one place for management purposes. Thus, there will be full coordination at all times.

(6) Your estate can be flexible enough to meet all contingencies and still can be kept within the goals that you have set forth insofar as investment policy and disbursement of funds are concerned.

(7) Funds placed with a trust department are completely apart from other bank funds. Trust departments of national banks are subject to audit by federal bank examiners, adequate bonding is required and all investments must be approved by the trust investment committee composed of senior bank officers.

(8) The corporate trust department guarantees continuity of supervision. Any individual whom you might name as trustee could die or become disabled and would need to be replaced, but the continuous expert management by a trust department is not in any way dependent upon the survival of one individual.

(9) Costs for executors are set by law. Fees for trust management average 0.5 per cent of the trust assets per year. A $100,000 trust costs about $500 per year to manage. This fee is generally repaid many times over in the prudence with which your assets are managed.

(10) Chiefly because of taxes and continuing inflation, the burden of conserving an estate is an enormous one. The size of your estate is not a determining factor in this connection. In fact, the smaller estate poses a bigger job to the individual or corporate trust department that undertakes to manage it, for when assets are no more than barely sufficient to meet the needs of the beneficiaries, supervision and conservation are doubly important.

MAKE YOUR ARRANGEMENTS PROMPTLY

If you have reached the enviable position of having an adequate estate and if you have planned it so as to assure your beneficiaries a minimum of taxation, take another look at it. Have you provided for capable, continuous management that will completely relieve your loved ones of worry and responsibility?

THE JOURNAL *Book Shelf*



BOOKS RECEIVED

CURRENT SURGICAL MANAGEMENT: A BOOK OF ALTERNATE VIEWPOINTS ON CONTROVERSIAL SURGICAL PROBLEMS, ed. by *John H. Mulholland*, M.D., *Edwin H. Ellison*, M.D., and *Stanley R. Friesen*, M.D. (Philadelphia, W. B. Saunders Company, 1957. $10.00).

ONE SURGEON'S PRACTICE, by *Frederick Christopher*, M.D. (Philadelphia, W. B. Saunders Company, 1957. $4.00).

CLINICAL GASTROENTEROLOGY, by *Eddy D. Palmer*, M.D. (New York City, Hoeber Harper, Inc., 1957. $18.50).

ANESTHESIA, A MANUAL FOR STUDENTS AND PHYSICIANS, Fifth Edition, by *Stuart C. Cullen*, M.D. (Chicago, The Year Book Publishers, Inc., 1957. $5.50).

PSYCHOPATHIC PERSONALITIES, by *Harold Palmer*, M.D. (New York City, The Philosophical Library, Inc., 1957. $4.75).

FROM STERILITY TO FERTILITY: A GUIDE TO THE CAUSES AND CURE OF CHILDLESSNESS, by *Elliot E. Philipp*, M.D., F.R.C.S. (New York City, The Philosophical Library, 1957. $4.75).

MODERN PERINATAL CARE, by *Leslie V. Dill*, M.D. (New York City, Appleton-Century-Crofts, Inc., 1957. $6.50).

BOOK REVIEWS

SCIENCE LOOKS AT SMOKING: A NEW INQUIRY INTO THE EFFECTS OF SMOKING ON YOUR HEALTH, by *Erick Northrup*. (New York City, Coward-McCann, Inc., 1957. $3.00).

Erick Northrup, a medical journalist and technical writer who is currently the feature editor of SCOPE WEEKLY, attempts to demonstrate in this monograph that "all those who have attempted to prove the evil effects of tobacco have failed to establish a valid scientific case." In his nine chapters, he deals with such subjects as "What We Know and Don't Know About Cancer," "Mice, Men and Smoking," and "Should You Smoke?" As a matter of fact, there are two chapters on the last of those subjects. There are many references to "the literature" and to older fantasies and supposition about tobacco.

The obvious slanting of this book will of course make the tobacco industry exceedingly happy. The prominent work which has been done tending to incriminate tobacco is mentioned only as a target to be shot full of holes. Of course there is much substance in his argument that *nothing derogatory has been scientifically proved against tobacco*, and perhaps there is need for such a book as his to serve as a neutralizing agent against the anti-tobacco sensationalism in today's press. In the opinion of this reviewer, however, the implication that "Science" says it is perfectly all right to go ahead and smoke is quite unjust.—*Daniel A. Glomset*, M.D.

THE CARE OF THE EXPECTANT MOTHER, by *Josephine Barnes*, M.A., D.M., F.R.C.S. (New York City, The Philosophical Library, Inc., 1956. $7.50).

This book is written by a female obstetrician and gynecologist practicing in England, and is written in the usual lucid style of the English.

It is not a large volume, but it is concise, clear and simple, and it is suggested for medical students, nurses, midwives and anyone else interested in the normal and abnormal aspects of pregnancy, and in summaries of the problems of diseases complicating pregnancy.

The only portion of the book which might be of no interest to the American reader is Chapter Six, "Maternity Services in Britain." All of the facets of pregnancy and its problems are covered, perhaps not adequately for the obstetrician and gynecologist, but certainly adequately for the interested practitioner.—*Claude H. Koons*, M.D.

REGULATION AND MODE OF ACTION OF THYROID HORMONES, ed. by *G. E. W. Wolstenholme*, M.B., and *Elaine C. P. Millar*. (Boston, Little, Brown and Company, 1957. $8.50).

This book, Vol. X of the Ciba Foundation's colloquia on endocrinology, is a compendium of papers on the regulation and mode of action of the thyroid hormones. The participants are all distinguished investigators in the field. The work presented for discussion by the participants is of a very basic nature, and practically all is the result of animal experimentation. The papers are thought-provoking, and the discussion is stimulating. However, because of its basic and detailed approach to the problem, the book will be appreciated more by the serious student of thyroid metabolism than by internists in general.—*Samuel J. Zoeckler*, M.D.

PRINCIPLES OF UROLOGY: AN INTRODUCTORY TEXTBOOK TO THE DISEASES OF THE UROGENITAL TRACT, by *Meredith F. Campbell*, M.D. (Philadelphia, W. B. Saunders Company, 1957. $9.50).

As the author states in the introduction to this volume, his purpose is twofold: "(1) the instruction of the student in the broad fundamentals of Urology; and (2) to serve as a practical guide for the physician who is not a Urologic specialist." As far as I can see, this book is a review and summary of the more pertinent items that Dr. Campbell covered in his previous books, both CLINICAL PEDIATRIC UROLOGY and the book which he edited, UROLOGY. He has taken the more fundamental chapters from those books and has summarized them in

the present volume. The chapter on "Embryology and Anomalies of the Urogenital Tract" is especially good in that he has left out most of the smaller and not too important details, but has included all of the essentials.

Almost all of the illustrations and drawings are very familiar to anyone who has read his previous volumes, and in the very last of the book he has borrowed from the YEAR BOOK OF UROLOGY in posing some questions concerning each chapter. These would be most useful for any student who is studying for the board examinations.

I believe this new volume of Dr. Campbell's can very well be recommended to anyone who is interested in board examinations and also to the student and the general practitioner.—*Charles W. Latchem,* M.D.

TEXTBOOK OF PATHOLOGY, by *Stanley L. Robbins,* M.D. (Philadelphia, W. B. Saunders Company, 1957. $..).

This refreshingly readable textbook epitomizes the newer, dynamic approach to the teaching of pathology in which the teacher attempts to instill in the minds of students a genuine curiosity as to the basic nature of disease through good correlation of pathologic and clinical observation.

The author emphasizes that the physician who is well skilled in medical practice knows his pathology, and that the physician well trained in pathology of necessity knows a great deal of clinical medicine. For clinician and pathologist, as well as for the medical student, Robbins' new book not only provides a wealth of information concerning gross and microscopic pathologic changes but also relates such findings to the clinical aspects of disease.

The introductory portion of the book is concerned with general pathologic processes. In the organization of later chapters, an outline of the lesions of each organ and system is followed by a lucid, yet brief, review of embryology, histology and physiology. Discussions of pathologic changes are related clearly to symptoms, and various technics are used to develop clinical-pathologic correlations, including presentation of well selected case histories.—*Richard F. Birge,* M.D.

ACADEMY OF PSYCHOSOMATIC MEDICINE

The psychosomatic aspects of obstetrics, gynecology and endocrinology, including diseases of metabolism, will be the theme of the scientific program at the Fourth Annual Meeting of the Academy of Psychosomatic Medicine, to be held at the Morrison Hotel, Chicago, on October 17, 18 and 19.

The Academy asserts that this is the first meeting ever held in the United States where these subjects will be presented from an interdisciplinary approach by leading psychiatrists, obstetricians, gynecologists, surgeons, pediatricians, physiologists, anesthesiologists and other specialists.

The purpose of the Academy is to bring psychosomatic medicine to the non-psychiatrically oriented physician in a practical and assimilable manner. The registration fee for non-members is $10. Copies of the program can be secured from William S. Kroger, M.D., secretary, 104 South Michigan Avenue, Suite 415, Chicago 3.

MISSISSIPPI VALLEY TRUDEAU SOCIETY

The usual fall scientific session sponsored by the Iowa Trudeau Society will not be held this year, because of the proximity of the excellent meeting that has been planned by the Mississippi Valley Trudeau Society for presentation at the Sheraton-Fontanelle Hotel, in Omaha, on October 11. The full-day session will be in connection with the 44th Annual Mississippi Valley Conference on Tuberculosis. Dr. Franklin H. Top, president of the Iowa Tuberculosis and Health Association and vice-president of the Mississippi Valley Trudeau Society, will preside during the afternoon session.

The program is as follows:

9:30 a.m. "The Treatment of Chronic Asthmatic Bronchitis and Pulmonary Emphysema"—David T. Carr, M.D., Mayo Clinic

10:00 "Nitrogen Dioxide Pneumonia: A Recently Recognized Entity in Silo Workers"—R. R. Grayson, Perryville, Missouri

10:20 "Differential Diagnosis of Miliary Disease of the Lungs"—Max Fleishman, M.D., Creighton University and University of Nebraska

10:40 "The Causes and Management of Pulmonary Hypertensive Heart Disease"—Howard S. VanOrdstrand, M.D., Cleveland Clinic and Frank E. Bunts Educational Institute

11:10 "PAS Ascorbate: Studies of Tolerance and Serum Levels in Contrast to Other Forms of PAS"—Roy L. Donnerberg, M.D., Herbert K. Fischer, M.D., Robert H. Browning, M.D., Philip C. Pratt, M.D., and Robert J. Atwell, M.D., Ohio Tuberculosis Hospital, Columbus

11:30 "Studies of the Mode of Action of Isoniazid in Vitro"—Dieter Koch-Weser, M.D., William R. Barclay, M.D., and Robert H. Ebert, M.D., Western Reserve University and University of Chicago

2:00 p.m. "The Control of Post-thoracotomy Pain"—John H. Mayer, Jr., M.D., Kansas City, Missouri

2:20 "The Treatment of Thoracic Empyema"—Richard L. Witt, M.D., and William Walter, M.D., University of Cincinnati

2:40 "The Direct Approach to Shadow and Substance: A Discussion of Bronchogenic Carcinoma"—Richard H. Overholt, M.D., Boston

3:20 "The Prophylaxis of Meningitis and Other Complications of Primary Tuberculosis; A U.S.P.H.S. Cooperative Study"—Arthur Robinson, M.D., National Jewish Hospital, Denver

3:40 "The Significance of Chromogenic or Otherwise Atypical Myco-Bacteria Isolated From Man"—Emanuel Wolinsky, M.D., Cleveland

4:00 PANEL DISCUSSION: "Methods in the Differential Diagnosis of Pulmonary Disease"—Dr. Barclay; Helen A. Dickie, M.D., University of Wisconsin; Milan Novak, M.D., University of Illinois; Jerome P. Murphy, M.D., Omaha; Ralph C. Moore, M.D., Omaha

MEDICAL HISTORY



The Beginnings of Medicine in Sioux County

HERMAN D. OGGEL, M.D., MAURICE
AND
CORNELIUS B. MURPHY, M.D., ALTON

The Lewis and Clark expedition had explored the upper reaches of the Missouri River in 1804, but it was not until 50 years afterward that the first pioneers reached the site of what is now Sioux City. From there, adventurers and trappers pushed up the Big Sioux into what is now Sioux County. At about that time, the Sioux Indians were becoming surly about the relentless advance of the "white man," and pioneering was not without its hazards, but encouraged by the tales that the trappers brought back of a fertile and potentially wealthy land, settlers began entering the area.

In the fall of 1859, four adventurers went forth from Sioux City along the east branch of the Big Sioux River, erected a dugout shanty and petitioned for the organization of Sioux County. The petition was granted, an election was held, and although no more than four votes had been cast, four officers were declared elected—a judge, a treasurer, a sheriff and a clerk. Until 1869 all 15 inhabitants of Sioux County lived in the courthouse at Calliope, the site of which is on the outskirts of what is now Hawarden. The building was actually a fort, with gun slits through which attackers could be fought off.

A succession of covered-wagon caravans began arriving in 1869, bringing Dutch people from Pella who wished to homestead in Sioux County. Five of the wagon trains arrived during the first year, and in all there were 60 that made the trip. The medical history of the area began simultaneously with that influx of homesteaders, and strangely enough its start, in 1871, was closely connected with the organization of the First Reformed Church in Orange City.

In the spring of 1872, the Reverend Seine Bolks, formerly of Zeeland, Michigan, became the first resident minister in Sioux County, and because he had a knowledge not only of the scriptures but also of medicine, obstetrics and surgery, he was able to serve his flock in two capacities. Indeed, so far as medical care was concerned, he served an even larger group. He gave aid to the afflicted and injured without regard to religious sect or creed, and he was admired, trusted and loved far and wide. He had been 58 years of age on his arrival, and he retired six years later, in 1878, because of asthma. He died in 1894 at age 80, and is buried in the cemetery at Orange City.

The life led by the pioneer physicians of Sioux County was an extremely hard one all through the year. There were no bridges or graded roads, horses and buggies were scarce and the settlers had very little with which to pay their doctors. In the 1880's wild ponies, known as mustangs, were brought in from Texas, and spring wagons and buggies became more plentiful.

Patients were cared for in their widely-separated homes, and obstetric cases and critically ill patients necessitated the doctor's virtually taking up residence at the bedside. Thus, the physician had almost no time to himself, and seldom got a night's sleep in bed. In the winter time, snowdrifts and blizzards made travel difficult and even dangerous, but summer travel had impediments of its own. Traveling six or eight miles took an hour in the best of circumstances, and in rainy weather the sloughs and creeks were treacherous and the mud was deep. In the early 1890's roads were located, and in the following years they were improved gradually, but though automobiles came into use in the early 1900's, the doctors had to keep horses to haul them in buggies when the roads were muddy, and in bobsleds when they were blocked with snow.

On September 4, 1903, in response to a call by the Iowa State Medical Society, the doctors of Sioux County met and organized the Sioux County Medical Society. They adopted the constitution and by-laws that the State Society had suggested to them. The charter members were Drs. F. J. Smith, H. E. Miller, D. V. Gleysteen, A. DeBey, W. R. Ream, N. G. O. Coad, D. J. Werkman, D. G. Lass, J. J. Galman, H. M. Stadt, H. Beyer, S. B. DePree, F. J. McAllister, C. S. McCarthy and H. D. Oggel.

In an effort to avoid confusion, we shall relate the history of the medical practitioners according to the towns in which they practiced. Some of the data were obtained in interviews with old settlers, and hence is subject to some error, but most of the material has been taken from written records and is substantially correct.

ORANGE CITY

Dr. A. F. H. DeLespinesse was born in Holland in 1817. His father, a physician in Napoleon's army, wanted him to study medicine, and though the boy preferred to enter the ministry, he yielded to his father's wishes and graduated as a physician from the University of Utrecht, in the Netherlands. He proved to be a good physician and was decorated by the king of Holland for his work during a plague epidemic. In addition, he was an excellent violinist and wrote some 37 books, some of them medical and others non-medical, which were published in Holland.

In 1870, following the death of his wife, he decided to give up the practice of medicine and move to America. In this country, following an unsuccessful venture in Chicago real estate and a likewise disastrous attempt to become a gentleman-farmer at Shenandoah, Iowa, he reentered medical practice in Orange City in 1873. He bought three and a half acres of land where the Orange City school now stands, built a small office and soon was busy attending the scattered families.

To supplement his income, he taught Latin to several young men about to enter college and taught medicine to four boys, one of whom was his son Gysbertus. Dr. DeLespinesse continued his practice until shortly before his death, in 1880, at the age of 63. His remains are buried in the Orange City cemetery.

Dr. Henry S. Baron, the next physician to locate in Orange City, married Eva Hospers, whose brothers had helped found the town. Dr. Baron had graduated from the Physico-Medical College of Indiana, at Indianapolis, in 1878, and arrived in town just in time to help fight the smallpox epidemic of 1880-1881.

The Chicago and Northwestern Railway was being built through Sioux County and one of its itinerant workers fell ill. When the doctors had recognized his ailment as smallpox, none of the citizens would allow him to be put to bed in a house and he had to be given makeshift accommodations in a church stable. He died the following day, but he had exposed many people at the boarding house where he had taken his meals, and soon the epidemic was in full swing.

The doctors sent east for vaccine, but many people refused to be inoculated because they felt that such a procedure thwarted the will of God. Thus the spread of the disease couldn't promptly be checked, and many patients died. In the surrounding towns, fear reached such a pitch that armed guards were posted to turn away anyone who might attempt to come there from Orange City. It is reported that trains refused to stop, and some people thought that they actually speeded up as they passed through the beleaguered town.

By the spring of 1882, the epidemic was over, but Dr. Baron had become discouraged, and he moved away—first to Pella, and later to Michigan.

Dr. Gysbertus A. F. DeLespinesse, who has already been mentioned as a medical student, had spent three years in practice at Oostburg, Wisconsin, when he consented, in 1880, to succeed his father in Orange City. He was a kind-hearted man, he was well liked, and he built up a very large practice. In 1901, he was joined by his younger brother, Dr. A. F. Henry DeLespinesse.

After 20 years, having developed chronic bronchitis, Dr. Gysbertus moved to Bremerton, Washington, where he lived to be 90 years of age.

Dr. Carl W. Wormser had graduated from the College of Physicians and Surgeons in New York City (the medical department of Columbia University) in 1879. He arrived in Orange City in 1883, and practiced there for 25 years. He was a quiet man and did not participate to any considerable extent in public affairs.

At the age of 47, in 1903, he hoped that a move to Arizona would help him combat the cardiovascular renal disease that he had contracted, and he chartered a private Pullman car to take himself and his family there. But he died on the way.

Dr. Albert DeBey was born in 1861, and graduated from Rush Medical College in 1884. After practicing in Clymer, New York, for a few years, he first came to Alton, Iowa, in 1888, and then moved to Orange City in 1890.

One noteworthy fact about Dr. DeBey was that he weighed about 300 pounds. He read a great deal and was well-versed in literature. Besides this, he had a fine baritone voice and loved to sing, he played the piano and cello, and he belonged to a local orchestra. He was highly interested in politics and in other public affairs.

He built up a large medical practice, and because of his interest in surgery, he opened a small hospital in 1905. He is reputed to have been the first Sioux County doctor to perform major surgical operations. He served as county coroner, he was a member of the State Board of Health and the State Board of Medical Examiners, and he was local surgeon for the Chicago and Northwestern Railway. He retired in 1933 and died in 1937 of diabetes and arteriosclerosis.

Dr. A. F. Henry DeLespinesse, a younger son of Orange City's first physician, was born in 1874 and graduated from the University of Iowa Medical School in 1901. He practiced for a little while with his brother Gysbertus, but soon left to run a pharmacy in Oklahoma. After a short time, when his brother's health had begun to fail, he returned to Orange City and practiced there until 1926. Then, because of poor health and the strain of general practice, he accepted a post as government medical examiner at the customs office in Eastport, Idaho. Soon thereafter, he died quietly in his sleep, and his cremated remains were buried at Seattle.

Dr. Conrad DeJong was born in Orange City in 1871. He graduated from the medical school at

the University of Iowa in 1897, and practiced for a few years at Edgerton, Minnesota, before buying out Dr. Wormser's practice. He enjoyed a busy practice in Orange City from 1903 until 1912.

In the latter year, he associated himself with Dr. VanBuren Knott, in Sioux City. Later, he moved to Fort Dodge, and in 1915 he went to Grand Rapids, Michigan, where he specialized in surgery and had a large practice. He died of cerebral hemorrhages in 1942.

His only son, Dr. Russel DeJong, is now head of the Department of Neurology at the University of Michigan and is the author of several textbooks in neurology.

Dr. John G. DeBey was the son of Dr. A. DeBey. He was born in 1883 and graduated from the Drake University Medical School, in Des Moines, in 1910. In Orange City he was associated with and succeeded his father in the practice of medicine and surgery. He carried on a large and successful practice until his death from coronary thrombosis in 1944.

He was gifted in music, had a fine singing voice and frequently sang in public. He belonged to many civic organizations and was held in high esteem by his patients and by his fellow practitioners.

Dr. Chester Vernon Fisher was born in Orange City in 1894 and graduated from the S.U.I. College of Medicine in 1919. He served in the U. S. Army during World War I and started practice in his home town in 1922. But he developed tuberculosis, moved to California and died there in 1927, about a year after leaving Orange City.

Dr. William Doornink was born in Sioux Center in 1898 and graduated from the S.U.I. College of Medicine in 1925. He began his medical practice in Orange City and in 1927, when he became particularly interested in obstetrics and surgery, he opened a small hospital. Later, he converted a hotel into a hospital and transferred his patients there. He was well liked and had a large practice, but in 1953 heart trouble forced him to retire. After a year of semi-invalidism, he died in 1954.

Dr. Edward B. Grossman was born in 1909 and graduated from the S.U.I. College of Medicine in 1934. He practiced at the Glenwood State School from 1935 to 1937, and then associated himself with Dr. John DeBey, in Orange City. He served three years in the U.S. Army during World War II (1942-1945).

Dr. Alexander Bushmer, born in Sioux City in 1916 and a graduate of the George Washington University Medical School, in Washington, D. C., had practiced for four months at West Point, Nebraska, when following the death of Dr. John DeBey, Dr. Grossman asked him to take over the vacant practice in Orange City. The two men subsequently formed a partnership, and they still practice together and are co-owners of the Grossman Hospital.

Dr. Robert Zeilenga was born in Ireton, one of the smaller towns in Sioux County, in 1922. He graduated from the medical school at the University of Kentucky in 1947, and in the following year became associated with Dr. Doornink in Orange City. From 1949 through 1951, he served in the U. S. Air Force, and since his discharge has been taking a residency in dermatology in California.

Dr. Dick VanEldick was born in Rock Valley in 1928 and graduated from the S.U.I. College of Medicine in 1952. Following his graduation, he served for two years in the U. S. Air Force and then started practice in Orange City, taking over the practice of the late Dr. Doornink.

MAURICE

Dr. Wickering was the first doctor to practice in Maurice. Very little is known about him except that he opened an office there in 1884 and left in the fall of 1886.

Dr. O. D. Wilson graduated from the school of medicine at the University of Iowa in 1887. Thereafter, he practiced in Maurice until 1895, when he moved to Ireton. He remained in that town for only a short time before moving to Everett, Washington, where he accepted a salaried post with the I.O.O.F. Lodge.

While he was in Maurice he was active in politics and served on the town council.

Dr. Edward John Warnshuis graduated from Rush Medical College in 1894. He practiced for a few months in Sioux Center, and then moved to Maurice. He had a rapidly growing practice, but unfortunately he developed a ruptured appendix and died in December, 1896. His remains are buried in Nassau Cemetery at Alton, Iowa.

Dr. Robert M. Foster was born in 1870 and graduated from Trinity Medical College, Toronto, in 1896. He started practice in Maurice, but in 1898 he moved to Le Mars and, later, to Chicago, where he was still in practice when last heard from, in 1951. But he had announced his intention of retiring and of making his home in Oak Forest, Illinois.

Dr. William R. Boyer was born in 1871 and graduated from Hahnemann Medical College and Hospital, Chicago, in 1894. He came to Maurice in 1899. He was a kind-hearted, pleasant man, and he was well-liked as a doctor. In the summer of 1902, he left to take a postgraduate course in surgery in Chicago, and he subsequently located in Pawnee City, Nebraska, where he built up a thriving surgical practice and opened a hospital. When last heard from in 1950, he was still busily at work.

Dr. Herman D. Oggel was born in Grand Haven, Michigan, in 1873, and when he was nine years old he came, with his family, to Orange City. After graduating from Northwestern Academy and working for several years in the drugstore and post office, he attended Rush Medical College, where he graduated in 1900. After two years of

practice with Dr. A. DeBey in Orange City, he moved to Maurice, where he is now retired after 51 years of serving that community.

He was local surgeon for the Great Northern Railway for 33 years. He is a Life Member of the AMA and the Iowa State Medical Society, as well as a member of the "Fifty Year Club." He is the only living charter member of the Sioux County Medical Society. He enjoyed a successful practice for 53 years, and enjoys his retirement equally. He is responsible, in large part, for this medical history.

HULL

Dr. Nicholas G. O. Coad was born in 1852 and graduated from the University of Vermont in 1887. He started practice in Hull in 1888 and remained there until 1910, when he moved to San Diego. While in Sioux County he had a busy practice and was active in the County Medical Society, having been one of its charter members.

Dr. Dirk John Werkman was born in 1867 and graduated from the University of Michigan in 1892. He came to Hull in the 1900's and enjoyed a thriving practice there until 1914. For a while thereafter, he gave up practice and taught chemistry at Coe College. He died at Cedar Rapids in the early 1950's.

Dr. David G. Lass, born in 1858 and an 1886 graduate of the Vanderbilt University Medical School, was a charter member of the Sioux County Medical Society. He came to Hull in the 1890's and practiced there until 1906. In 1920 he was in practice at Ocheydan, Iowa.

Dr. William T. Shepard, born in 1865, practiced for five years in Denver, Colorado, following his graduation, in 1888, from Hahnemann Medical College and Hospital, and then worked in Hull until 1899. He next moved to Le Mars, where he limited his practice to internal medicine and helped to found the Le Mars Clinic in 1917. He moved to California in 1935 and died there in 1947.

Dr. Gerrit Maris was born in 1882 and graduated from the S.U.I. College of Medicine in 1906. After graduation he began practicing in Hull and became interested in surgery. In 1918 he opened a hospital there and enjoyed a large medical and surgical practice. He was a member of the American College of Surgeons, he wrote several papers for medical journals and was a speaker at one of the annual meetings of the State Medical Society. In 1952 he moved to Sioux City, where he conducted a part-time practice until his death on January 1, 1955.

Dr. Carl Samuelson, a 1923 graduate of the S.U.I. College of Medicine, was associated with Dr. G. Maris in Hull for a little over a year before moving to Sheldon.

Dr. Walter VanderWilt was born in Hull in 1898 and graduated from the S.U.I. College of Medicine in 1925. He was associated with Dr. Maris during his first year of practice, and then moved to Rock Rapids, where he had a successful practice and opened a small hospital. He contracted pneumonia and died there in February, 1939.

Dr. Herman J. Kooiker was born in 1888 and graduated from the University of Minnesota in 1918. After practicing in several other Iowa towns, he was located in Hull from 1937 until 1941. Afterward, he moved first to Milford, and afterwards to Cincinnati, Ohio, where he was practicing in 1951.

Dr. August Oelrich, a brother of Dr. Carl Oelrich, of Sioux Center, was born in 1916 and graduated from S.U.I. in 1939. After practicing in Hull from 1940 until 1943, he entered military service. Since his discharge, he has taken specialty training in surgery and now practices in Sanford, North Carolina.

Dr. Lester M. Dyke, who was born in Orange City in 1899 and who graduated from the S.U.I. College of Medicine in 1926, served 20 years in the Army Medical Corps and was chief of the surgical service of an Army hospital in England during World War II before retiring with the rank of colonel. He joined Dr. Maris in Hull in 1946, but after a short time moved to Sheldon, where he practiced until 1951. Since then he has been head of the Student Health Service at the University of Illinois.

HOSPERS

Dr. Balthazar Johannes DeVogel, the first doctor to practice in Hospers, had been born in Holland in 1846 and graduated from the University of Utrecht in 1868. After working as a ship's doctor for many years, he came to Iowa and was licensed to practice in 1886. He located in Hospers and practiced there until he retired. He enjoyed a wide reputation as a rheumatism specialist and drew many patients from neighboring towns. He died there in 1916.

Dr. Oscar W. French was born in 1868 and graduated from Rush Medical College in 1893. He began practice in Hospers in 1894 and remained there until 1899, when he moved to Coalville, Utah, where he continued practicing until he was well into his eighties. He died there in September, 1950.

Dr. James J. Galman was born in Kalamazoo, Michigan, in 1872 and graduated from the Detroit College of Medicine in 1897. He then came to Hospers, where he practiced for 48 years, having a considerable clientele. He was a talented musician and an accomplished pianist. After his retirement in 1947, he made his home in Sheldon, and he died there in 1949.

Dr. Lambertus Mulder was born in 1922 and graduated from the University of Michigan in 1946. He started practice in Hospers in 1947, shortly after Dr. Galman retired. In 1951 he went into military service for three years, and on his dis-

charge he returned to Michigan to practice with his father, who is chief of the medical staff and superintendent of Pine Rest Sanatorium, in Grand Rapids.

ROCK VALLEY

Dr. Edward O. Plumbe, the first doctor in Rock Valley, had graduated from the Eclectic Medical College in New York City in 1868. He had served as a Union Army surgeon during the Civil War prior to the completion of his medical studies.

If it was 1871 when he first came to Sioux County, it may have been he who was the first physician in residence, but that portion of his record is a bit vague. It is known that in Orange City, where he first settled, he had difficulty in conversing with his patients because he didn't know the Dutch language, and he moved to Rock Valley in 1874.

A man of many interests, he owned and operated a newspaper, and opened a drugstore in 1881. He was, at various times, mayor and county superintendent of schools, and it was he who erected the first dwelling house in Rock Valley. His wife, in 1880, taught the first school in the area, and he—as a justice of the peace—performed the first marriage (1879) that took place in the town.

In 1907 he moved to Chicago, and there he achieved some prominence through his lectures to various clubs on the "Recollections of a Civil War Surgeon." He died there at the age of ninety.

Dr. Cornelius M. McBride practiced for 20 years in Rock Valley, following his graduation from Rush Medical College in 1881. In 1901 he moved to Idaho, and when he was last heard from, in 1921, he was still in active practice in New Plymouth Canyon.

Dr. Samuel M. Bradshaw was born in 1854 and graduated from the University of Kentucky in 1886. He came to Rock Valley in 1889 and practiced there until his death in 1925.

Dr. Wilfred E. Blatherwick was born in 1870 and graduated from Rush Medical College in 1901. He practiced in Rock Valley from then until 1909, when he moved to North Dakota. He died in Newtown, North Dakota, in 1956.

Dr. F. J. Huizenga was born in Virginia in 1872, and graduated from Rush Medical College in 1895. Because he was especially interested in surgery, he established a temporary hospital in 1905, and moved into the Rock Valley Hospital in 1909. For the grand opening of the new structure, a large ball was held, and the proceeds ($200) were donated to the hospital.

Dr. Huizenga was the owner of one of the first automobiles in the County (1905). After many years of busy surgical practice, he was killed in 1915 when his car left the road while he was returning from a visit to a patient in the country. He was a happy fellow, he had a large number of friends, and he was greatly missed.

Dr. Richard Huizenga, who had been born in 1876 and who had graduated from Rush in 1902, joined his brother in practice at Rock Valley. Having had rheumatic fever as a child, Dr. Richard wasn't very robust, and in 1912 he gave up rural practice and moved to Oak Park, Illinois. But following Dr. Frank's death in 1915, he came back and, excepting for his two years of military duty during World War I, he served the Rock Valley community until his death in 1932.

Dr. Arthur L. Lock, born in 1885, was a 1913 graduate of the University of Iowa's Homeopathic School. He began practice in Rock Valley in 1915, and continued at work for 37 years, until 1952, when he died. He had a large practice and was well liked by the entire community.

Dr. Lester R. Hegg was born in 1898 and graduated from the Rush Medical College in 1930. He practiced in Beresford, South Dakota, for four months, and then was employed for about one year by the Department of the Interior. In 1932 he came to Rock Valley and is still there, the only medical doctor for miles around and having a large medical, surgical and obstetric practice.

He is active in community affairs and at a celebration in 1954 he was voted Rock Valley's "Man of the Year." His wife is active in medical Auxiliary work, and was president of the Woman's Auxiliary to the Iowa State Medical Society in 1954.

BOYDEN

Dr. Wilbur Brink was born in 1851 and graduated from Rush Medical College in 1884. He practiced in Boyden from 1886 until 1924, and in 1937 he died of cancer of the esophagus.

Dr. S. E. Gannon graduated from Hahnemann Medical College and Hospital in 1879. He was admitted to membership in the Sioux County Medical Society in 1904, and he left Boyden in 1908.

Dr. Gustave L. Stoehr was born in 1877 and graduated from the S.U.I. College of Medicine in 1909. He came to Boyden that same year and stayed until 1913, when he moved to Minnesota. In the 1920's he was still practicing there.

Dr. Hamilton A. Bolstad was born in 1884 and graduated from the S.U.I. College of Medicine in 1913. After graduation, he began practicing in Boyden and remained there until 1929.

Dr. William VanZanten was born in 1884 and graduated from the Drake University Medical College in 1911. After practicing for several years at Woodland, Iowa, he moved first to Sanborn and then, in 1926, to Boyden, where he practiced until 1930. Later, he returned to Boyden for a year, but again left and in 1951 was located at Brighton.

IRETON

Dr. Arthur Hall Mosher was born in 1859 at Andalusia, Illinois, and graduated from Rush Medical College in 1882. He came to Ireton in 1883, and practiced there for over 20 years. In 1904 he moved to Le Mars, where he organized the Mosher Hos-

pital and cared for a large number of patients until his retirement in 1928. He died in Le Mars in 1938.

Dr. Thomas E. McCaughan was born in 1870 and graduated from Rush Medical College in 1895. He came to Ireton in 1904 and was well liked, and had a large and busy practice. In 1931 he moved to Long Beach, California, where he died in 1937 of coronary thrombosis. His remains are buried in the Ireton cemetery.

Dr. Frederick C. Bendixen was born in 1893 and graduated from the S.U.I. College of Medicine in 1921. He came to Ireton in 1923 and practiced there until 1938, when he moved to Le Mars. He is currently in active practice there.

Dr. R. J. Carlson was born in Sioux City in 1894. From 1921 until 1929, he engaged in high school teaching, and in 1933 he graduated from the S.U.I. College of Medicine. He practiced from 1934 until 1936 in Ireton, then moved to Merrill, and afterwards to Sioux City.

Dr. Elmer J. Bild, born in 1877 and a 1903 graduate of the University of Iowa, practiced at Ireton from 1940 until 1945. He then moved to Page, Nebraska, where he practiced until his death in 1956.

GRANVILLE

Dr. Louis S. Stoll was the first doctor known to have practiced in Granville. After graduating from the University of Iowa Medical School in 1872, he practiced there until 1895, when he moved to Sioux Center, Iowa, but he remained there only for a short time.

Dr. Paul B. Vosburg was born in 1866 and graduated from Northwestern University Medical College, in Chicago, in 1893. He practiced for one year at Stanhope, Iowa, and then came to Granville, where he practiced until 1904 when heart trouble forced him to retire. He then moved to his farm adjacent to Granville, where he remained until his death in 1927. He was active in practice and in the community. He operated the drugstore and the post office, and also was mayor of the town.

Dr. W. R. Ream was a graduate of Sioux City Medical College and a charter member of the Sioux County Medical Society. Little is known about him except that he came to Granville some time before 1903 and left for Chicago in 1906.

Dr. Bert A. Bowers was born in 1878 and was licensed by the Iowa State Board of Medical Examiners in 1905. He bought out the practice of Dr. Vosburg and practiced in Granville until 1912, when he moved to Sioux City. He practiced there until his death in the early 1950's. His son Clifford and his son-in-law Dr. H. Burroughs were associated with him in practice at Sioux City.

Dr. James A. Wagner was born in 1881 and graduated from the University of Iowa Medical School in 1907. He practiced in Granville in 1913 and 1914, and later moved to Primghar, Iowa, where he practiced until 1953. When fire destroyed his office, he became discouraged and retired. In 1954, he was killed when his automobile collided with a freight train.

Dr. Anton L. Fink was born in 1881 and graduated from the University of Insbruck, in Austria, in 1910. He came to Granville in 1914 and practiced there until 1930. He then took a course in proctology and moved to Carroll, Iowa, where he specialized in rectal diseases. He died of coronary occlusion in 1941 while in a taxicab on the way to a hospital.

SIOUX CENTER

Dr. Dirk Mulder, who studied medicine in the Netherlands and took his M.D. degree from the University of Illinois in 1887, was the first doctor known to have practiced in Sioux Center. He came there in 1887, was well liked and had a large practice. He was very musical and played the piano well. He remained in Sioux Center until 1903, when he moved to Lynden, Washington, where he practiced until the time of his death.

Dr. Henry M. Stadt was born in 1870 and graduated from the University of St. Louis in 1893. He began his practice in Sioux Center and remained there for 12 years. Subsequently, he practiced at Orange City for five years before moving, in 1909, to California, where he worked for a chemical laboratory until his death.

Dr. Hart Beyer was born in 1872 and graduated from the Rush Medical College in 1900. He practiced in Sioux Center from then until 1908, when he moved to Pittsville, Wisconsin. He died there, in 1953, while on his way to the hospital with a patient.

Dr. Seine B. DePree was born in Michigan in 1873 and graduated from the Rush Medical College in 1903. He practiced in Sioux Center until 1938, when he died of carcinoma of the stomach. He was a quiet, well-liked man, and had a large practice.

Dr. Albert C. Jongeward was born in 1883 and graduated from Rush Medical College in 1904. He began practicing in Sioux Center and was active there until a year before his death, in 1938. He died of pernicious anemia.

Dr. William Maris was born in 1890 and graduated from the University of St. Louis in 1917. He began his practice in Sioux Center and continued active there until shortly before his death. He was a brother of Dr. Gerrit Maris, of Hull, and an uncle of Dr. Cornie Maris, of Sanborn. Dr. Maris was widely known throughout the Sioux Center area for his ability in obstetrics. He died in October, 1955.

Dr. Carl D. Oelrich was born in 1907 at Orange City, and graduated from the S.U.I. College of Medicine in 1933. In 1934, he began practice in Sioux Center, and opened a private hospital there. He served in the U. S. Army Air Force from 1944 to 1946, and on his return from military service,

instead of reopening his hospital, he actively promoted the establishment of a community one. The new institution opened in 1951, and Dr. Oelrich is still actively engaged in practice at Sioux Center.

Dr. Arthur R. McGilvra was born in 1913 and graduated from the University of Iowa in 1941. He was in military service from 1943 until 1946, and then started practice in Sioux Center in association with Dr. Wm. Maris. Since the death of Dr. Maris, he has continued alone, and has a large and busy practice.

HAWARDEN

Dr. Marshall E. Doolittle was born in 1851 and graduated from the University of Missouri School of Medicine, in Columbia, in 1881. A graduate in homeopathy, he came to Hawarden in 1888 and practiced there until his death.

Dr. Will A. Quigley was born in 1857 and graduated from Rush Medical College in 1880. He was licensed to practice in Iowa in 1886 and came to Hawarden in 1888. He practiced there until 1922, when he had a coronary occlusion and died while sitting in his office chair.

Dr. John Browuer came to Calliope (now a part of Hawarden) in 1880. He opened the first drugstore in that territory, and in 1902 he sold his practice to Dr. F. McAllister and moved to Spokane, Washington, where he died of a heart attack in 1934.

Dr. Fred J. McAllister was born in 1877 and graduated from the University of Iowa Medical School in 1902. He then started practice in Hawarden, where he was well liked and had a large, successful practice. He was a charter member of the Sioux County Medical Society and was active until 1924, when he died of pernicious anemia.

Dr. Charles S. McCarthy was born in 1864 and graduated from the University of Iowa Medical School in 1888. He came to Hawarden about 1894 and enjoyed a large practice until 1913, when he moved to Burlington and later to Muscatine. He died in 1933.

Dr. Albert J. Meyer was born in 1883 and graduated from the University of Kentucky, at Louisville, in 1910. After graduation he came to Hawarden, where he had a large practice until 1930, when he moved to California. In 1950 he was still practicing in Glendale, California.

Dr. Frederick F. Null was born in 1878 and graduated from the Sioux City College of Medicine in 1907. He practiced for a short time in Struble, Iowa, then moved to Ireton, Iowa, and after a few years located in Hawarden, where he remained until his death in 1953, from coronary thrombosis. He was instrumental in obtaining a fine new hospital for Hawarden in 1936.

Dr. Linwood C. Gardner was born in 1897 and graduated from the S.U.I. College of Medicine in 1921. He came to Hawarden in 1923 and practiced there until 1926, when he moved away. In 1951 he was still in practice at Fond du Lac, Wisconsin.

Dr. Thomas J. Glasscock was born in 1878 and graduated from the University of Kentucky, at Louisville, in 1904. He came to Hawarden in 1931, and is still practicing there. He is a quiet, semi-retired Southern gentleman and a fine doctor.

Dr. Marvin O. Larson was born in 1905 and graduated from the S.U.I. College of Medicine in 1931. He started practice in Alton, Iowa, in 1932, and left there in 1936 to take postgraduate work in surgery. He then moved to Hawarden, where he is still practicing medicine and surgery. He served in the U. S. Army from 1943 to 1945.

Dr. David K. Haggor was born in 1916 and graduated from the University of Nebraska in 1943. He served in the U. S. Army from 1944 and 1946, and then came to Hawarden in 1948. He has practiced there ever since.

Dr. Edward Eneboe was born in 1916 and graduated from Northwestern University in 1943. He served in the U. S. Army in 1944-1946, and practiced in Alcester, South Dakota, from 1946 to 1952. In 1953 he came to Hawarden, and has since worked in partnership with Dr. Haggor.

ALTON

Dr. Andrew P. Owens was the first doctor who is known to have practiced in Alton. He was born in 1848 and graduated from the University of Kentucky, in Louisville, in 1877. He came to Alton in 1878 and built up a large general practice. In 1887, he sold his practice to Dr. F. J. Smith and moved to Minnesota, but shortly afterward returned to Hull, Iowa. He stayed there for only a short time, and then formed a partnership with Dr. G. A. F. DeLespinesse, in Orange City. This lasted only a short time, and he then went into the banking business in Oklahoma. He died in Texas in 1937 at the age of 89 years.

Dr. Ferdinard J. Smith was born in 1862 and graduated from the University of Iowa Medical School in 1887. He came to Alton in that same year and was a charter member of the Sioux County Medical Society, which he had helped to organize. In 1904 he went to Des Moines to become professor of chemistry and assistant dean of the Drake University College of Medicine. In 1913, after the College of Medicine at S.U.I. had absorbed the Drake medical school, he returned to general practice at Little Rock, Iowa, but after six years he retired to his cottage on Lake Okoboji, where he lived until his death in 1948. He had two sons who became doctors of medicine. Dr. Arthur Smith currently is practicing at Manning, Iowa, and Dr. Millard Smith practiced at Trinidad, but is now deceased.

Dr. Henry E. Miller was born in 1851 and graduated from the St. Louis College of Physicians and Surgeons in 1895. He came to Alton in the late 1890's and was a charter member of the Sioux

County Medical Society. He practiced there until shortly before his death in the late 1920's.

Dr. Dirk V. Gleysteen was born in 1871 and graduated from the University of Michigan in 1895. Shortly after graduation he came to Alton to practice and was a charter member of the County Medical Society. In 1909 he moved to Lamberton, Minnesota, and later retired to Long Beach, California, where he died in 1952.

Dr. Dirk J. Gleysteen was born in Alton in 1881 and graduated from the Rush Medical College in 1905. Following graduation he interned at Passavant Memorial Hospital, in Chicago, and then started practice in Sheldon. He practiced there for one year and then moved to Alton in 1908. He remained in active practice in Alton until the time of his death, from coronary thrombosis, in May, 1946. He was well liked as a doctor and had a large practice in the surrounding territory.

Dr. Dirk J. Scholten was born in 1878 and graduated from the University of Illinois in 1904. Following graduation, he started practice in Alton, and in 1907 moved to Kalamazoo, Michigan, where he is still in practice.

Dr. Robert W. Cooper was born in 1897 and graduated from the University of Pennsylvania in 1921. He came to Alton in 1925 to practice with Dr. D. J. Gleysteen. In 1936 he left Alton and took postgraduate work in roentgenology. Thereafter he joined the Shumpert Clinic, in Shreveport, Louisiana, in 1941, and practiced there until his death in 1944.

Dr. Cornelius B. Murphy was born in Michigan in 1906. He graduated from the University of Minnesota in 1931 and then took postgraduate work there and at the Minneapolis General Hospital. He practiced for a year, in 1935-1936, at Granville, Iowa, and then associated himself with Dr. D. J. Gleysteen until the latter's death in 1946. Since then he has been alone in practice in Alton. His is active in community affairs and has a busy practice. He is a kind-hearted, substantial man, a very competent physician, and is very highly regarded by his clientele and by the general public.

Dr. Rodney R. Gleysteen was born in Alton in 1913, the son of Dr. D. J. Gleysteen. He graduated from the S.U.I. College of Medicine in 1938 and came to Alton to be associated with his father and with Dr. Murphy. He entered military service in the U. S. Navy in 1941 and is still in the Navy Medical Corps, holding the rank of captain.

CONCLUSION

Sioux County has been a leader in the quality of its medical care and in its community health programs. In 1936 it helped to organize the District Health Unit, and since then has had the services of a county public health nurse. In 1934 a survey showed 34 per cent of its school children had been immunized for diphtheria, pertussis and smallpox, but through regular school immunization programs, in 1955 no fewer than 70 per cent had been immunized. There are three excellent hospitals in the County—at Orange City, Hawarden and Sioux Center.

It is of interest to note that in the 80 years since the first doctor came to Sioux County, the practice of medicine has changed considerably. Transportation is faster and easier, and many towns that sometimes had two or three doctors now have none. At present, Boyden, Hull, Granville, Hospers, Maurice and Ireton are without doctors. In 1922 there were 21 doctors in active practice in the County, and now there are 10.* Home confinements are things of the past, bed patients are usually cared for in a hospital and house calls have been greatly reduced.

The general practitioners of today can see twice as many patients as their colleagues of 50 years ago, and still not work so hard. But the life of the country doctor is still a busy and a rewarding one.

MINNESOTA A. G. P. FALL REFRESHER

The Seventh Annual Fall Refresher of the Minnesota Academy of General Practice will be held at the Hotel Leamington, Minneapolis, on October 15 and 16. The program, starting at 2:00 p.m. on October 15, consists of 10 hours of lectures by 22 outstanding medical teachers.

Inquiries and reservations should be sent to the general chairman, Dr. John T. Pewters, 2020 First Avenue South, Minneapolis.

FARM-CITY WEEK

The national committee for Farm-City Week, November 22-28, has extended a special invitation to all state and county medical societies to join in a program to "build better relationships between town and country neighbors." As in the past two years, this observance will be conducted nationally and locally by hundreds of civic, industrial, agricultural, professional and youth organizations—all spearheaded and coordinated by Kiwanis International.

The AMA, which is represented on the Farm-City board of directors, this month (October) will send to all societies a series of suggestions for highlighting their urban and rural health services during the Week. In most cases, local programs will be coordinated by community Kiwanis clubs. Names of both regional and state Farm-City Week chairman also will be sent to medical societies so that physicians may be represented on the local planning committees.

* In its original form, this history included the names of about 15 more physicians, each of whom practiced in the County for no more than one or two years.—*The Editors.*

MEDICAL EDUCATION IN RUSSIA

In the late summer and fall of 1956, four American physiologists had an opportunity to spend some time studying their specialty in Moscow, and one of them, Chauncey Leake, Ph.D., of Ohio State University, subsequently wrote an interesting account of his observations, especially regarding medical education, for the JOURNAL OF MEDICAL EDUCATION.*

Russian medicine, Dr. Leake reports, is in a fluid state of development. There seems to have been a liberalization during the past few years, in that the teaching is less strictly authoritarian and that Russian medical men now seem anxious to make contact with Western colleagues. Western medical journals are abstracted and indexed with great efficiency there, and the leading ones are readily available in the major libraries. There seems to be high prestige associated with medical training, and there even are high monetary rewards. Yet there is considerable regimentation, one of the better features of which is that attendance at refresher courses is required of practicing physicians.

Russia, Dr. Leake says, has about 80 medical schools, and they are unassociated with the universities. They are usually called "medical institutes," but they do not feature research. The numbers of medical graduates have been rapidly expanding during the past four years. In 1955 there were 25,000 graduates, as compared with 8,000 in the United States.

Relatively large classes are admitted, but thinning proceeds apace thereafter. From 200 to 1,000 graduates of two-year colleges start the five-year medical course, but those who flunk individual course exams are relegated to various sorts of technical courses outside or on the fringes of medicine. As a result, graduating classes are about two-thirds as large as entering ones. Those who complete the course serve a year of internship afterward.

At the two Moscow medical schools, there are 4,000 students and 500 faculty members each, and there are two curricula, one for practicing physicians and one for sanitarians. The leading teachers seem to have been recruited from the staffs of research institutes. Thus most of the preclinical teaching is done by anatomists and physiologists. Clinical instruction seems to be offered chiefly by those who hold hospital appointments or who work for clinical research institutes. Regardless of his curriculum, the student's courses during the first two years consist of 160 hours of physics; 220 hours of foreign language; 400 hours of chemistry, including biochemistry; 250 hours of microbiology; 400 hours of gross, micro- and neuro-anatomy; and 400 hours of mammalian and human physiology. In the third year the neophyte physicians and sanitarians take pathology and pharmacology together.

Anatomy is quite conventional. Biochemistry is well handled, with conventionally equipped laboratories and texts. Microbiology is rather broadly considered, and includes parasitology and virology. It also is extended into the control of infectious diseases. Pharmacology seems to be well developed, with careful consideration being given to the new drugs. Pathology is approached largely from a physiologic standpoint. Physical diagnosis seems to be well developed, but clinical laboratory procedures are by no means so extensive or so systematic as ours. Dr. Leake thinks that the weeding-out of the less capable that takes place in the medical schools facilitates bedside teaching in the clinics.

In spite of large classes, it was Dr. Leake's impression that the teaching seemed effective and satisfactory, and it appeared to him that the staffs were enthusiastic and the students diligent.

Besides describing medical education, Dr. Leake made some interesting comments on the current practice of medicine in Russia. All people, he says, are inoculated, given booster shots, and made to undergo annual physical check-ups either in factory or in farm clinics, with the result that preventable disease incidences are remarkably low, despite open wells and the lack of sewage disposal systems. The Russians, he reports, are worried about the growing frequency of cancer, heart disease and polio cases, and seem very grateful for the Salk vaccine. Venereal disease seems well controlled, except for gonorrhea, of which there has recently been an increase.

The Russians have a large choice of antibiotics and are vigorously searching for more. In local anesthesia, they seem to be quite restricted to procaine. There appears to be much interest in preparations of the glands of internal secretion, but by far the greatest interest is in connection with drugs that act upon the autonomic or central nervous system. History taking, Dr. Leake says, is less careful than ours, and medical records are less detailed. There is very little appreciation of statistical control.

Plan to attend the 1958
ISMS Annual Meeting
Veterans Memorial Auditorium
Des Moines
April 20-23

* Leake, C.: Medical education in the U.S.S.R. J. MED. EDUCATION, 32:269-277, (Apr.) 1957. Excerpts from the article are to be found in the August, 1957, issue of the BULLETIN OF THE FEDERATION OF STATE MEDICAL BOARDS OF THE UNITED STATES, pp. 240-245.

DEFENSE

At this time of year, with the spotlight fixed on the Big Ten, the Big Eight, the Pacific Coast Conference and the other segments of the National Collegiate Athletic Association, all conversations about defense are likely to concern the positioning of line-backers and safety men on the football field.

There is, however, another sort of defense that we should think of, not only as a protection against enemy aggression but as a preparation for such disasters as floods, fires, tornadoes, plane and train accidents, etc. It is very easy for us to sit back and assure ourselves that disaster will not strike our particular area, but such an attitude is like that of the ostrich that hides his head in the sand. Disaster, in one form or another, can strike any place, and it is foolhardy to wait for a catastrophe to occur before making plans for saving the lives that it will endanger. Civil Defense includes the Civil Air Patrol, the amateur radio network and the plane-spotting service, but it also includes the medical and hospital disaster organization. This last is the means of mobilizing facilities for the care of the sick and injured, and it is the immediate concern of physicians.

The professional groups in Iowa have undertaken voluntarily to make their facilities and personnel a part of the Civil Defense organization. On January 11, representatives of the Iowa State Medical Society, the Iowa State Nurses' Association, the Iowa Dental Association, the Iowa Pharmaceutical Association, the Iowa Hospital Association and the Iowa Veterinary Association met with Dr. Edmund G. Zimmerer, commissioner of the State Health Department and medical director of Civil Defense for this state, and made plans for setting up Medical Civil Defense committees at state, area and county levels. Each of the committees that were subsequently set up consists of a member each from the six professional groups, with the physician member acting as its chairman, and the committee at the state level is advisory to Dr. Zimmerer. Organizational meetings have so far been held in six of the eight Civil Defense areas into which Iowa is divided, and a second meeting of the state committee was held on September 19.

It is the responsibility of all qualified citizens to assist and to share in the objectives of the Iowa Civil Defense Agency. The problem is too large for instantaneous solution, so it is proposed that the Medical Service Branch be organized first and that the other branches be made to grow from the Medical Branch.

Basically, in the State of Iowa, the Medical Branch must have its fundamental organization at the community level. Because facilities and personnel vary widely, a blanket plan cannot be formulated. In Civil Defense Area No. 1, which consists of 25 counties in south central Iowa, each county has been asked to set up its own community organization, in which the medical personnel and hospitals will cooperate with the county Civil Defense chairman. These county plans will then be incorporated into an area organization and then into the Medical Service Branch of the Iowa Civil Defense Agency.

Through the Polk County Medical Society, with Dr. M. E. Alberts as chairman of the program, Polk County has progressed quite far with disaster mobilization and has already staged a "dry-run" operation. The fire department and the police force of Des Moines cooperated in meeting the simulated emergency, and the exercise served to acquaint all of the various personnel with the problems with which they would be faced in a real disaster, as well as to bring to light some improvements that could be made in the plans. It is hoped that other communities will conduct similar "dry runs."

The value of integrated plans for the handling of casualties following natural disasters can be seen if one compares the records of what happened in Kansas City and in Dallas following tornadoes this past summer. In the suburb of Kansas City that was struck by a tornado in June, there was utter confusion at the disaster site. In consequence, telephone switchboards were overloaded, curiosity-seekers jammed traffic paths, and the nearest hospital was quickly overcrowded with the injured. Dallas, however, had had a "dry run" only four days before its tornado struck. The city's "Operation Disaster" plan was minutely detailed, and within 10 minutes the scheme had been put into effect. All components of the organization functioned very satisfactorily.

Let's all of us become "defense minded" and help promote and organize community disaster plans. Regardless of how small your community may be, it can become a part of the national defense program.

Woman's Auxiliary News

OUR PRESIDENT SAYS—

Our "new year" has begun. Many of you have already had your first meeting; others will have it this month. This is the beginning, and from these and subsequent meetings will come the progress we anticipate so eagerly. For me, October means a Fourth District meeting at Sioux City on the 3rd, the Board Meeting in Des Moines on the 15th and 16th, and the National Conference of State Presidents, Presidents-Elect and National Committee Chairman at the Drake Hotel in Chicago on October 21-23. I hope to have many items of general concern to report to you as a result of these meetings. In the meantime, you too will be planning new projects and cultivating new ideas. If your local Auxiliary has any helpful suggestions to share with the rest of us, won't you please let me know? We need to promote enthusiasm in our state organization, and that enthusiasm must come from individual members.

Would it not be helpful to you to keep a record of your activities and progress at each meeting so that at the end of the year your report might be practically complete? I should like to suggest that each group have a roll call at every meeting and record the number in attendance. It will be of interest to all of us to know the percentage of attendance the county Auxiliaries have during the year. The more members attending, the more can be accomplished and the more life we will have in our organization.

All of you are anxious to increase your membership, I know, and are making every effort to do so. Remember that if there are any doctors' wives in adjoining counties who are not members of an organized Auxiliary, you are encouraged to ask them to join your group.

It is my sincere hope that my next message to you will contain a report on some of your activities, together with suggestions for all of us. I know these things are of primary interest to you, and I shall pass them on as quickly as you report them to me.

Sue Gerken
President

IN MEMORIAM

The members of the Woman's Auxiliary to the Iowa State Medical Society were saddened to learn of the death, in July, of Mrs. Edward Luke, of Coin.

NATIONAL CONFERENCE ON PROGRAM AND PROJECTS

The 1957 National Convention of the Woman's Auxiliary to the American Medical Association is now a pleasant memory, and the members of the organization who attended the meetings in New York are now at work in their own state and county Auxiliaries with renewed interest, inspiration and valuable information pertaining to all phases of Auxiliary activities.

On Monday, June 3, I took part in a panel discussion on "Progress and Projects for County and State Auxiliary Meetings." Mrs. John Chenault, National Program Chairman, was the moderator for this panel, and at her request, I told the group about the Iowa Auxiliary's work for the handicapped. I explained briefly what we are doing for handicapped adults in Iowa, and how much interest this work has created among our membership. I also mentioned the growth of this endeavor during the past few years, and pointed out that as we gave our time and effort to this worthy cause, we established good public relations with members of our respective communities. Iowa is the only state that sponsors a project of this kind, and our Auxiliary should feel very proud of this achievement.

Mrs. H. C. Merillat
President-elect

EDUCATIONAL LOAN FUND COMMITTEE

Three new loans were granted this year, bringing to 24 the number of girls whom this Loan Fund has assisted financially. Miss Rosemary Remele, of Granger, has been granted a loan of $500; Miss Kathleen McGovern, of Riceville, $206; and Miss Rose Teresa Trout, of Des Moines, $706. All these girls have enrolled at Mercy Hospital School of Nursing, in Des Moines. A fourth applicant for a loan has now received a Cancer Society Scholarship, but may need assistance next year.

We have out on loan a total of $6,429.50, and are committed to pay $877 on the present applications. Three notes, totaling $1,248.50, will become due and payable in February, 1958. All payments due in September have been paid, and there remains a balance of $895.44 in the treasury.

THE CHATTER BOX

Jack and Lois Powers, of Estherville, attended the regatta which was held in August at White Bear. Their son entered the sailing festivities with the Okoboji Yacht Club.

Wally and Pat Anderson have returned to Des Moines after a trip to Washington, D. C. Enroute home, they visited friends in Youngstown, Ohio, and also in Cleveland.

The **Harold Merselises**, of Audubon, have been the busiest people we know this fall. Not only have they welcomed a brand new little one to their home, but they have also purchased a summer home at Lake Okoboji! Congratulations!

This little riddle was sent to us. Can you guess the names of the two girls who got lost in their own county going to the Third District Meeting?

Please send us news. We are anxious to hear from every one of you. 'Bye for now.

TEACHER TRAINING FOR GRADUATE NURSES

U.S.P.H.S. grants totaling $3,000,000 have been made to 60 collegiate schools of nursing and public health throughout the country to provide approximately 800 traineeships for graduate nurses who wish to qualify for teaching and administrative positions in nursing schools. This is the second year of the program, and both the money and the number of trainees have been increased approximately 50 per cent from last year.

Only a relatively small number of the traineeships are to be given institutions in Iowa and its immediate vicinity. The College of Nursing at S.U.I. is to have six; none have been granted to the schools in Nebraska; in Missouri, St. Louis University will get eight and Washington University 18; South Dakota State College (Brookings) will get three; in Wisconsin, Marquette will get eight and the University of Wisconsin 11; the University of Minnesota will get 44; and in Illinois, the University of Chicago will get 24 and De Paul University nine.

HEALTH DEPARTMENT REPORTS ON HOSPITAL NEEDS

A state-wide survey of hospitalization in Iowa is said to have shown that facilities are now 25 per cent adequate for the care of the chronically ill; 30 per cent adequate for the care of mental cases; 82 per cent sufficient for general medical and surgical patients; and 100 per cent adequate for tuberculosis cases.

The survey was intended to serve as a basis for decisions on the types of facilities to be built with federal financial help. Two dollars of local money must be advanced for each dollar of national subsidy secured, and the survey must have the approval of U.S.P.H.S.

The findings were as follows:

Chronic illness hospitals—410 beds added in the last 10 years, all with federal assistance. A total of 1,091 available and 3,204 more needed. First priority for this category.

Mental hospitals—887 beds added in last 10 years, 270 of them with federal assistance. A total of 4,000 available and 13,450 more needed. Second priority for this category.

General hospitals—4,524 beds added in last 10 years, 2,614 of them with federal assistance. A total of 10,476 available and 2,280 more needed. Third priority for this category.

Tuberculosis hospitals—No beds added in last 10 years. A total of 596 available and no more needed.

So far as the federal government is concerned, public health centers are supposed to have first priority, but under present Iowa law public funds cannot be used to build them in this state. The State Health Department, nevertheless, is said to have made tentative plans for the building of 27 county or multi-county units of that sort in anticipation of securing authorization for them from the General Assembly.

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MRS. L. R. HEGG RECEIVES "WOMAN OF THE YEAR" HONORS



Mrs. L. R. Hegg, of Rock Valley, was chosen "Woman of the Year" by her fellow townspeople this last summer. Previous recipients of the honor have been dubbed "Man of the Year," and Mrs. Hegg was singled out as their successor.

The occasion for the presentation was the ground-breaking ceremonies for a community swimming pool, a project that Mrs. Hegg took a leading role in promoting. The ROCK VALLEY BEE, in reporting the event, said that selection is based upon the citizen's life-long contributions to the town's welfare, rather than to work performed during the preceding 12 months, and mentioned Mrs. Hegg's service to the local chapter of the Red Cross.

In the picture, Mr. Walter McNamara is shown presenting the honor to Mrs. Hegg. The man at the right is Mr. Russ D. Henegar, director of the Sioux Falls Municipal Band, which provided music at the ground-breaking ceremonies.

NEW MEMBER AT LARGE

The Dickinson County Auxiliary, and indeed the entire state organization, welcomes another member-at-large, Mrs. Denes Farago, originally from Hungary. Dr. Farago recently took over the practice of the late Dr. T. F. Ward, at Arnolds Park.

Mrs. Farago was a guest at the District III meeting in Rock Valley recently, and she has joined the Auxiliary because she is anxious to become acquainted with other physicians' wives and learn of their activities, and because she welcomes the opportunity the Auxiliary will give her to share in health programs.

FUTURE NURSES' CONFERENCE

The FNC Conference will be held in Waterloo on November 8, 1957. It is hoped that the attendance will exceed that of last year, the first meeting to be held in the fall.

Registration and program will be at the Allen Memorial Hospital, Logan Avenue, Waterloo. A copy of the program and plans has been forwarded to each Future Nurses club and to its sponsor. Mrs. Harold Entz, 441 Kingbard Avenue, Waterloo, is state chairman of the Careers Recruitment Committee responsible for the planning of this Conference.

WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

President—Mrs. J. F. Gerken, Waterloo
President-Elect—Mrs. H. C. Merillat, 2800 Woodland Avenue, Des Moines 12
Secretary—Mrs. Wm. C. Shinkle, 907-49th St., Des Moines
Treasurer—Mrs. E. A. Vorisek, 6205 Woodland Rd., Des Moines 12
Editor of THE NEWS—Mrs. E. T. Burke, 601 S.W. 42nd Street, Des Moines 12
Asst. Editor of THE NEWS—Mrs. D. F. Crowley, Jr., 663 44th Street, Des Moines 12



Dr. Felix Hennessy, of Calmar (right), was honored by the Winneshiek County Medical Society and the Iowa State Medical Society at a dinner in Decorah on September 5 marking the fiftieth anniversary of his entry into medical practice. Dr. Fred Sternagel, ISMS president, gave him a 50-year service pin. Dr. Hennessy was president of the State Society in 1940. The lady in the picture is Dr. Hennessy's daughter, Mrs. S. J. Sisk, of Chicago.

U. OF ILLINOIS FALL MEDICAL REFRESHER

The Medical Alumni Association of the University of Illinois is to sponsor a Fall Medical Refresher on Saturday, November 23, on the professional colleges campus in Chicago. The day-long affair, first of its kind at the College of Medicine, will consist of panels and open symposia on current medical problems, moderated by key faculty members. Tours of the hospitals and Medical College, with a social hour and dinner at the Illini Union Building, are also to be parts of the activities. It is planned to hold such events twice annually.

AMA MENTAL HEALTH CONFERENCE

The fourth annual AMA Conference on Mental Health will be held at the Drake Hotel, Chicago, November 22 and 23. The four discussion topics will be (1) the role of the general practitioner in relation to a specific psychiatric case; (2) Blue Cross-Blue Shield and other voluntary health insurance plans for the psychiatric patient; (3) relationship of the psychiatrist in private practice to the general hospital in his community; and (4) psychiatric and related mental health problems in industry.

Dr. Manfred Guttmacher, of Baltimore, will be the guest speaker at a dinner meeting on November 22. His subject will be "The Role of Psychiatry in Relation to the Problem of Capital Punishment."

Plan to attend the 1958 ISMS Annual Meeting

STATE DEPARTMENT OF HEALTH

Edward D. Zimmer
COMMISSIONER

INDICATIONS FOR ANTIRABIES TREATMENT

An editorial in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION* five years ago, discussing the indication for antirabies vaccine (Pasteur) treatment for persons who have been exposed to the bite or saliva of a rabid animal, contained the following statement:

"The exact incidence of these post-vaccinal reactions is not known, but a significant number of neuroparalytic sequelae, including some fatalities, do occur. Thus in deciding whether to administer anti-rabies vaccine the physician must balance the risk of potential serious post-vaccinal reaction against the possibility of the development of rabies.

"Indications for vaccine treatment in cases of animal bites were considered by the first session of the WHO Expert Committee on Rabies, held in April, 1950. The committee published detailed indications [see accompanying table] for the use of vaccine that are designed to avoid, as much as possible, indiscriminate use of the Pasteur treatment. Use of the Pasteur treatment was favored only in cases of bites and licks of uncaptured, wild, or rabid animals and in cases of multiple bites of the head, neck, and shoulders. Similar conservatism has been advocated by Sellers, who considers anti-rabic treatment contraindicated in the following circumstances: (1) When there is no broken skin anywhere on the body, including face or mouth; (2) If previous wounds are known to be 24 hours old and are covered with an unbroken scab; (3) If the tooth wounds were made through untorn clothing (such wounds are usually bruises); (4) If exposure is limited to handling only the dog or objects contaminated with the saliva, or to drinking the milk of rabid cows or goats; (5) If the wounds were inflicted not less than seven days prior to detection of visible signs of the disease; and (6) If the animal remains normal for as long as seven days after inflicting the wounds. Reimmunization should be avoided for borderline exposure regardless of the time elapsed since the last treatment according to Sellers. He recommends that retreatment be limited in any case to a short booster series of five or six injections."

In Iowa since January 1, 1940, two persons have died of rabies, and during the same period three persons have died of unwarranted antirabies treatment. Unfavorable reactions are more likely to occur if the patient has received Pasteur treatment previously.

DUCK EMBRYO RABIES VACCINE

Duck embryo rabies vaccine has become available within the last year. The WHO Expert Committee on Rabies (Third Report) states, "Experimental evidence indicates that neuroparalytic accidents do not occur after administration of vaccine prepared from avian embryos. Limited experience in humans confirms this observation."

* Editorial, J.A.M.A., **149**:1318-1319, (Aug. 2) 1952.

MORBIDITY REPORT FOR MONTH OF AUGUST

Disease	*1957 Aug.*	*1957 July*	*1956 Aug.*	*Most Cases Reported From These Counties*
Diphtheria	1	2	0	Polk
Scarlet fever	45	42	9	Des Moines, Johnson, Polk
Typhoid fever	6	2	3	One each, Black Hawk, Crawford, Dubuque, Sac, Scott, Shelby
Smallpox	0	0	0	
Measles	135	384	103	Delaware, Scott, Story
Whooping cough	14	11	51	Polk
Brucellosis	7	23	18	Hardin
Chickenpox	27	57	28	Boone, Linn, Delaware
Meningococcus meningitis	1	1	3	Woodbury
Mumps	85	182	32	Dubuque, Linn, Scott
Poliomyelitis	26	8	175	Woodbury
Infectious hepatitis	20	5	16	Dubuque, Polk
Rabies in animals	20	11	15	O'Brien, Polk
Malaria	0	0	0	
Psittacosis	1	0	1	Johnson
Q fever	0	0	0	
Tuberculosis	46	33	31	For the State
Syphilis	127	78	98	For the State
Gonorrhea	51	37	55	For the State
Histoplasmosis	0	0	2	
Food intoxication	0	0	0	
Meningitis (type unspecified)	3	0	8	Dallas, Polk, Warren
Diphtheria carrier	0	0	0	
Aseptic meningitis	16	0	2	Polk
Salmonellosis	8	3	7	Clayton
Tetanus	0	1	1	
Chancroid	0	0	0	
Encephalitis (type unspecified)	8	1	2	Dubuque, Pottawattamie
Influenzal meningitis	1	0	0	Polk
Amebiasis	0	8	0	
Shigellosis	1	0	0	Scott

The routine prophylactic treatment consists of 14 doses. It is recommended in lieu of brain-tissue vaccine especially for persons who have received brain-tissue vaccine previously. It should be used with caution in persons sensitive to egg protein.

ANTIRABIES SERUM

Antirabies serum is a relatively new product. It does not replace antirabies vaccine, but serves as an adjunct in certain situations. The primary function of antiserum, so far as is shown by experimental evidence published to date, is to establish protective titers of antibody immediately after exposure and thus bridge the gap between exposure and the time when vaccine induces effective antibody responses. It is intended to provide immediate passive protection. It is short lasting, since it does not stimulate antibody production in the exposed person. Antiserum is indicated especially when the incubation period is likely to be short, such as may be the case when there have been multiple bites about the head, face or neck. The dosage varies with the patient's weight and the time elapsed before administration. The use of antiserum does not alter the indications for the use of vaccine.

Since antirabies serum is of equine origin, it is necessary to test for immediate sensitivity in the patient before the serum is administered.

NOTES REGARDING THE ACCOMPANYING TABLE

The great importance of local treatment should be reemphasized. The ideal local treatment includes infiltration with antirabies serum, together with thorough cleansing of the wound and the application of nitric acid if the site permits. The dose of serum used in local infiltration will be dictated chiefly by the site of the bite. Where possible, however, not less than 5 ml. should be used.

The general principles on which the accompanying guide is based are that in mild exposures a course of vaccine following the above recommended local treatment is sufficient, whereas following severe exposures the full systemic dosage of antirabies serum together with vaccine should

(Continued on page xlviii)

GUIDE FOR SPECIFIC POST-EXPOSURE TREATMENT

Nature of Exposure	*Status of Biting Animals*		*Recommended Treatment*
	AT TIME OF EXPOSURE	DURING OBSERVATION PERIOD	
I. No lesions; indirect contact only	Rabid	———	None*
II. Licks:			
(1) Unabraded skin	Rabid	———	None*
(2) Abraded skin scratches and abraded or unabraded mucosa	(a) Healthy	Healthy	None
	(b) Healthy	Clinical signs of rabies or proven rabid	Start vaccine at first signs of rabies in animals*
	(c) Signs suggestive of rabies	Healthy	Start vaccine immediately; stop treatment if animal is normal on 5th day after exposure*
	(d) Rabid, escaped, killed, or unknown	———	Start vaccine immediately*
III. Bites:			
(1) Mild exposure	(a) Healthy	Healthy	None*
	(b) Healthy	Clinical signs of rabies or proven rabid	Start vaccine at first signs of rabies in animal*
	(c) Signs suggestive of rabies	Healthy	Start vaccine immediately; stop treatment if animal is normal on 5th day after exposure*
	(d) Rabid, escaped, killed, or unknown or any bite by a jackal, fox, wolf, or other wild animals	———	Start vaccine immediately*
(2) Severe exposure; (multiple or face, head or neck bites)	(a) Healthy	Healthy	No vaccine as long as animal remains normal
	(b) Healthy	Clinical signs of rabies or proven rabid	Hyperimmune serum immediately; start vaccine at first sign of rabies
	(c) Signs suggestive of rabies	Healthy	Hyperimmune serum immediately; followed by vaccine; vaccine may be stopped if animal is normal on 5th day after exposure
	(d) Rabid, escaped, killed, or unknown, any bite by wild animal	———	Hyperimmune serum immediately, followed by vaccine

* See explanation in the final section of the text.

At the third annual meeting of the Board of Directors of the North Central District Blood Bank Clearing House, held in Chicago on July 12, **Dr. W. S. Pheteplace,** Davenport pathologist, was elected president for the 1957-1958 year.

On August 26, **Dr. Madelene Donnelly** returned to her desk at the State Health Department following her convalescence from surgery. She is director of the Division of Maternal and Child Health.

Dr. Julius Pietrzak, a foreign medical school graduate who has worked at the Independence Mental Health Institute and elsewhere in Iowa during the past few years, has opened a practice in Cedar Rapids.

Dr. John M. Baker, a 1953 graduate of the College of Medicine at S.U.I. has joined **Dr. J. E. Houlahan** in practice at Mason City.

At the September 19 meeting of the Woodbury County Medical Society at the Mayfair Hotel, in Sioux City, **Dr. J. H. Fairbairn,** of the Mayo Clinic, spoke on "Peripheral Vascular Diseases."

At the October 1 meeting of the Scott County Medical Society, **Dr. George E. Morrissey,** historian for the group, will present a paper on "The Langer Case." It deals with "the unforeseen and widespread repercussion following the questionable judgment of the Scott County Medical Society in expelling one of its members in 1859." Incidentally, **Dr. Langer** was probably the first physician in the country to administer medicine by hypodermoclysis.

RHINOLOGY

The American Rhinologic Society will hold its third annual meeting at the Palmer House, in Chicago, on October 18-19, 1957, and afterwards it will hold a three-day clinical session at the Illinois Masonic Hospital. There will be no registration fee, and all members of the profession are welcome to attend. Further information can be secured from Mrs. Mabel Campbell, 830 Wellington Avenue, Chicago 14.

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EXPANSION PROPOSED IN VOLUNTARY PREPAYMENT PROGRAM

Addressing the annual meeting of the Industrial Relations Research Association in New York City on September 6, Mr. Fred Slavick, research director of the S.U.I. Bureau of Labor and Management, pointed out the principal ways in which his group thinks the voluntary prepayment system for meeting health care expenses should be broadened.

The "greatest need for research and experimentation," he said, is in insurance coverage for nonsurgical services outside the hospital. Referring to a report by the Health Insurance Council, he stated that of 107,662,000 individuals covered by voluntary hospital insurance at the end of 1955, only 55,506,000 had coverage for doctors' nonsurgical services.

Apropos of "deductible" coverage for medical care, Mr. Slavick asked, "How small must the deduction be before the individual will be encouraged to seek medical diagnosis or treatment immediately, or at least not be discouraged from doing so?"

He questioned whether the impact of major medical insurance plans has caused the prices for medical services to increase, and he asked for research on ways to minimize or prevent such a development. He also proposed investigations of the use that can be made of multiphasic tests as a technic for finding sub-clinical cases of diseases that are curable only if discovered in their very early stages.

Indications for Antirabies Treatment

(Continued from page 664)

be employed. In such systemic use of serum, although it is recognized that the earlier the treatment is started the better, there is no time limit as to when serum can and should be given. Serum should be administered in a single dose (0.5 ml. per kg. of body weight) at the start of treatment, followed by a course of not fewer than 14 daily doses of vaccine.

Sensitivity to serum should be tested before serum is used.

It is fully recognized that in certain situations specific conditions may warrant modifications of the accompanying guide, e.g., exposure, especially in young children or in patients from whom a reliable history cannot be obtained, and particularly in areas where rabies is known to be enzootic, even though the animal at the time of exposure is considered healthy. Such cases may justify treatment immediately in a modified way. One possible modification consists, following local treatment of the wound as described above, of two or three doses of vaccine given at daily intervals and no further doses as long as the animal stays healthy. Surveillance should be maintained for 10 days following exposure.

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Financing Medical Care

Where Are We Now? What of the Future?

WILLIAM O. PURDY, M.D.

DES MOINES

SINCE WORLD WAR II, the method used in financing medical care in the United States has undergone marked change.

FINANCING BY GOVERNMENT

You are familiar with the role which governmental units have been playing in the financing of medical care, so I shall limit my comments to a reminder of the major areas of their participation.

The federal government provides medical care to veterans for service-connected disabilities and impairments, and under certain conditions, for disorders not service-connected. It provides medical care for the inmates of our federal penal institutions, as well as certain other types of institutions. Federal funds are used to operate the United States Public Health Service. Certain types of medical research receive financial support from the federal government. Funds are provided for assistance in the construction of certain hospitals other than those owned and operated by the government. The payment of disability benefits under our Social Security system aids, in an indirect manner, in the financing of medical care.

The federal government provides medical care for members of the various branches of our Armed Forces, and recently it made provision for financing the medical care of the families of military personnel in civilian facilities. In this latest endeavor, the State Medical Society controls the medical-care phase, and the hospital-care program is split between commercial carriers and Blue Cross. The contracts call for a fee to cover administrative costs, but will not provide any profit to the carriers for their services. So much for some of the areas in which the federal government is involved.

Our state, county and municipal governments provide financial aid in the medical care of the indigent, and provide medical care at the various penal, corrective, nervous and mental, and other types of institutions under their control. These branches of our government also finance various local public health organizations.

I do not need to remind you that the funds for the support of all these governmental programs, whether they be city, county, state or federal, are derived from the taxes which we pay.

Growth of Hospital, Surgical, and Regular Medical Expense Coverage

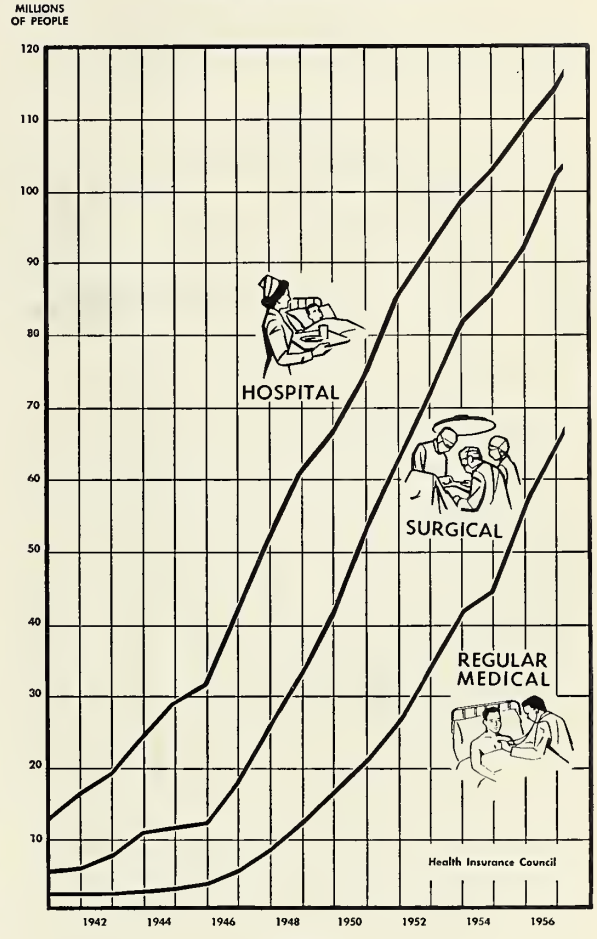


Figure 1

VOLUNTARY HEALTH INSURANCE

Let us now turn to a subject which is somewhat more pleasing and one which is currently receiving much attention—namely, voluntary health insurance. At the present time, there are two general types of contracts in use. One, the so-called service contract, is provided by Blue Cross and Blue Shield. The other, the indemnity form of contract, is provided by the various insurance companies.

Voluntary health insurance had its beginning in about 1934, and it has been expanding rapidly in recent years. As of December 31, 1956, the num-

Dr. Purdy is medical director of the Equitable Life Insurance Company of Iowa, and this is a paper which he read at a meeting of the Medical Library Club of Des Moines in March, 1957. Some revisions have been made in it for the purpose of bringing it up to date.

TABLE 1

PERSONS PROTECTED BY VOLUNTARY HEALTH INSURANCE AS OF DECEMBER 31, 1956

Hospital Expense	115,900,000
Surgical Expense	101,300,000
Regular Medical Expense	64,900,000

bers of people protected are indicated in Table 1.*

The growth of this type of financing can best be illustrated by means of a graph (Figure 1). We are all impressed with the rapid growth which has taken place in the past few years.

The distribution of hospital, surgical and regular medical expense coverages by type of insuring organization, as of December 31, 1956, can be found in Table 2.**

TABLE 2

PERSONS PROVIDED HEALTH INSURANCE BY VARIOUS INSURING ORGANIZATIONS AS OF DECEMBER 31, 1956

	Thousands of People Protected		
	Hospital Expense	*Surgical Expense*	*Regular Medical Expense*
INSURANCE COMPANIES:			
Group Insurance	45,211	45,906	25,177
Individual-Policy Insurance	27,429	23,074	6,789
Unadjusted Total	72,840	68,980	31,966
Deduction for Duplication in Persons With Insurance Company Protection	6,581	5,984	2,210
Net Total for Insurance Companies	66,259	62,996	29,756
BLUE CROSS, BLUE SHIELD AND MEDICAL SOCIETY PLANS:	53,162	42,570	33,907
INDEPENDENT PLANS:			
Industrial Plans	3,051	3,016	2,731
Community Plans	631	1,011	1,014
Consumer-Sponsored Plans	93	99	95
Private Group Clinics	479	483	536
College Health Plans	400	300	900
Total for Independent Plans	4,654	4,909	5,276
DEDUCTION FOR DUPLICATION: Persons Protected by More Than One Type of Insuring Organization	8,126	9,150	4,048
NET TOTAL, PERSONS PROTECTED	115,949	101,325	64,891

The newest form of insurance coverage to arrive upon the scene is the so-called major medical expense insurance. This type of coverage takes up where the regular hospital, surgical and medical insurance expense plans leave off. The maximum benefit is always substantial, and usually is limited to a fixed maximum amount. Most of these contracts provide for a deductible, and they may contain a co-insurance feature. As of December 31, 1955, the number of persons in the United States covered by this newest type of insurance was relatively small. Only 4,759,000 individuals had major medical insurance coverage under the group insurance plans, and 482,000 individuals had coverage under individual policies, but by the end of the year 1956, as is shown in Figure 2, the total number had grown to 8,876,000.

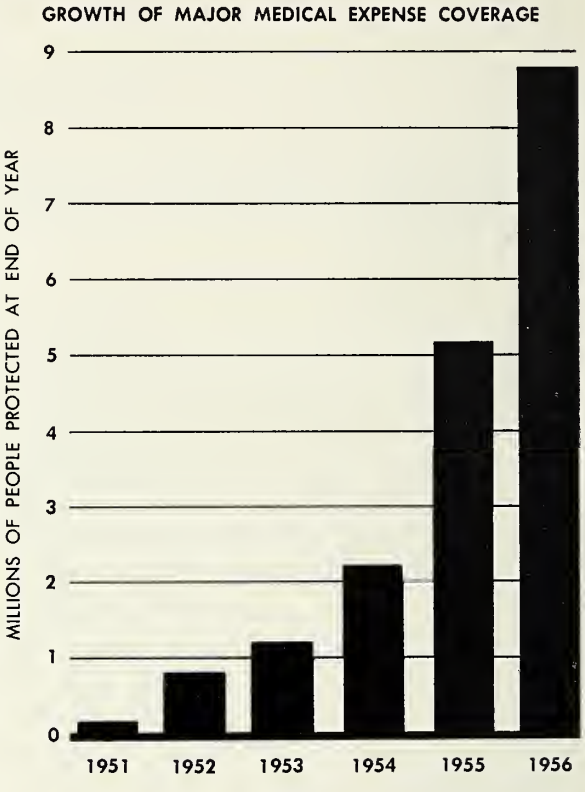


Figure 2

INDIVIDUAL

The third and last method of financing medical care is the direct payment of bills from the pockets of individuals. Here, I should also make mention of gratuitous services rendered to the indigent by physicians.

In this category are the payments made by people who carry no health insurance, and they are still a large group. Also, there are the payments made by individuals for services that are not included or are not covered completely by their insurance contracts.

PRESENT DAY PROBLEMS

From what has been said so far, we might well pat ourselves on the back and say that our current problems are, for the most part, solved. But nothing could be farther from the truth. I should like next to discuss some of the difficulties which we now face, ones which are becoming increasingly acute and which will be magnified many times over in years to come.

Government—particularly the federal government—is increasing the numbers of people for whom it undertakes to finance medical care, and

* From a release issued by the Health Insurance Institute, May 27, 1957.

** "Keeping Pace With Public Needs," Health Insurance Council, 11th Annual Survey.

further expansion in that area can be expected in the future. This problem has been and continues to be the subject of debate by both major political parties, and it would seem that unless we can solve the difficulties which face us at the present time and make provision for the solution of problems which will arise in the future, further action by the government can be expected.

Remarkable progress has been made in recent years by the insurance industry, including Blue Cross and Blue Shield, so that at the present time a large segment of our population has some form of insurance coverage. Yet, our present plans seem inadequate for our needs—or so most people seem to think. How much and what kinds of expansion may be advisable are questions to which different people have different answers, and there is likewise disagreement about what financial support governmental agencies should provide for the care of the sick.

Some of the groups in our population that are causing us concern at the present time are the aged and the retired, the indigent, the unemployed and those individuals having some, though inadequate, insurance coverage. I shall have more to say regarding these groups later on in this paper —particularly the aged and retired groups.

A discussion of this type would be incomplete without some mention of the problems and criticisms which relate to the various voluntary insurance plans now in operation. In our complex society it is only natural that we should have many different types and plans of insurance contracts. These various contracts, on the whole, have been devised to provide protection of certain types and for specified prices or premiums. The type of contract and the benefits provided may be adequate and desirable for one group, whereas they would not be adequate or desirable for another.

We must also recognize that one group may be in a position to pay a higher premium and thereby be able to secure more nearly complete coverage than another group. We know also that the cost of medical and hospital care varies from one section of the country to another. This lack of uniformity of contracts, with limitations in coverage, has led to criticism by the general public. Insurance contracts, for the most part, are constructed in such a manner that it is difficult for the average person to read them and fully understand what coverages they provide. This too has caused dissatisfaction. We must remember that an insurance contract is a legal document, and it is very difficult to prepare one that everybody can understand and interpret.

Another criticism, one which comes from the medical profession, concerns the lack of uniformity in claim blanks and the method to be followed in filing claims. There has recently been some improvement in these areas.

If I may express a criticism of my own, I should like at this point to suggest that most of our present-day plans place too much emphasis on the first dollar of medical and hospital cost, and not enough emphasis on the last dollar. I know it is the feeling in a lot of circles that a plan for insuring medical care should be all-inclusive and should provide for complete protection. Unfortunately there are too many of our citizens who think along those lines, and if we are not in sympathy with their viewpoint, it is up to us to point out the pitfalls and dangers that are involved in such a program.

This desire on the part of some of the public to have complete protection has resulted in the purchase of more than one contract and results in the individual's having duplicate coverage. This, I believe, is unsound, since it permits financial gain because of illness, whether real or feigned.

TABLE 3

UNITED STATES POPULATION 65 YEARS OF AGE AND OLDER

Age	*Male*	*Female*	*Total*
65-69 years	2,611,000	2,828,000	5,439,000
70-74 years	1,918,000	2,222,000	4,140,000
75-79 years	1,191,000	1,467,000	2,659,000
80-84 years	597,000	772,000	1,369,000
85 years and older	342,000	447,000	819,000
	6,660,000	7,766,000	14,426,000

Before leaving this area in our discussion, I should like to mention briefly another problem which has caused concern to the insurance carriers. It is the overutilization of benefits. Not infrequently, it is felt, patients are hospitalized unnecessarily so that the carrier can be made to pay for diagnostic studies and treatment which could have been conducted on an outpatient basis. We are all aware of the problem of custodial care, particularly for the elderly patient who lives alone and has no one to care for him at home while he is recuperating from an illness or surgery. By permitting such people longer periods of hospitalization than the medical indications justify, we are in part responsible for increases in premium, regardless of whether the contract providing coverage is a service or an indemnity contract. It should be evident to everyone that benefits or claims are paid from funds collected in the form of premiums, and when premiums collected are insufficient to pay the claims, plus the costs of administration, the premiums must be increased.

I should like now to direct my remarks to what I feel is the major problem facing us today—namely, the financing of medical care for the aged and the retired. Table 3 shows the numbers of people who comprize this group, according to figures issued by the Bureau of the Census on July 1, 1956.

As you see from the figures presented, there are more than 14,000,000 people 65 years of age and older, and it is estimated that by the year 1975 the

number will have increased to approximately 21,000,000.

In discussing a problem of this nature, it is necessary that we know something of the marital and economic status of the group as a whole. Tables 4 and 5, although prepared from data secured during the 1950 United States Census, give us some information relative to these factors.*

TABLE 4

MARITAL STATUS, CENSUS OF 1950

	Males				Females			
	20-64 Years	65-69 Years	70-74 Years	75 & Over	20-64 Years	65-69 Years	70-74 Years	75 & Over
Per Cent Married	77.5	74.0	67.5	52.4	77.7	48.9	36.6	18.7
Per Cent Widowed	2.1	15.0	22.3	38.5	7.2	41.1	53.3	71.2
Per Cent Divorced	2.3	2.3	1.9	1.3	2.9	1.6	1.1	0.6
Per Cent Single	18.1	8.7	8.3	7.8	12.2	8.4	9.0	9.5

TABLE 5

LIVING ARRANGEMENTS, CENSUS OF 1950

	Males			Females		
	20-64 Years	65-74 Years	75 & Over	20-64 Years	65-74 Years	75 & Over
Per Cent Living in Families	88.9	81.6	76.2	91.6	75.5	68.9
Head	72.4	71.6	54.2	6.0	13.6	14.5
Wife	—	—	—	70.5	39.3	15.0
Other Relatives	16.5	10.0	22.0	15.1	22.6	39.4
Per Cent Living Alone or With No Relative in Household	9.6	16.2	19.0	7.7	22.6	25.3
Per Cent Inmates of Institutions	1.5	2.2	4.8	0.7	1.9	5.8
In Mental Hospitals	0.6	1.1	1.3	0.5	1.0	1.5
In Homes for Aged and Dependents	0.1	0.9	3.2	0.1	0.8	4.2
In Other Institutions	0.8	0.2	0.3	0.1	0.1	0.1

The marital status and living arrangements of these individuals are very significant, for they have a direct bearing on the necessity for hospitalization in a given case. In contrast with the married person or the individual living in a home where there is someone other than the spouse to provide care, the individual living alone requires hospitalization more frequently.

Another interesting phenomenon that one encounters in considering this group is that the woman who lives alone requires more frequent periods of hospitalization than does the man. However, when the man goes to the hospital, he usually stays much longer than the woman. It has also been found that costly surgical operations are required more frequently by the male than by the female.

A brief word regarding the economic status of this group. In April, 1953, it was estimated that three-fifths of the males between 65 and 69 years of age were employed; two-fifths of those between 70 and 74 had jobs; and one-fifth of those over 75 had them. The number of employed females was smaller than the number of employed males. The average incomes of all persons and of older persons are given in Table 6.**

It has been estimated that the median net worth of persons over age 65 is $8,400. From common knowledge, I believe, we can say that the great majority of elderly persons who hold jobs are either self-employed, are employed in small businesses, have some part-time employment or are employed in private homes. Their earnings are generally small, and the amount decreases as they grow older and become unable to perform duties in an efficient and sustaining manner. Thus I think we must agree that funds available to them for defraying medical expenses are quite limited and are insufficient to take care of costly and prolonged illnesses such as they frequently encounter.

TABLE 6

INCOME, APRIL, 1953

	Persons 14 and Over	Persons 65 and Over
Per Cent of Persons Without Income	32.6	23.8
Per Cent of Persons With Income	67.4	76.2
Total	100.	100.
Median Income of Persons With Income	$2,301	$ 901
Percentage of Persons With Income		
Under $1,000	28.7	56.1
$ 1,000 to $ 2,000	16.6	20.1
$ 2,000 to $ 3,000	15.1	10.1
$ 3,000 to $ 4,000	15.6	5.5
$ 4,000 to $ 5,000	10.2	3.5
$ 5,000 to $10,000	12.0	3.5
$10,000 to $25,000	1.6	0.9
$25,000 and Over	0.2	0.3
	100.	100.

What is the situation of this particular group at this time, as far as voluntary health-insurance coverage is concerned? We have no way of knowing how many of these older people are protected by some form of insurance coverage. Estimates which have been made in several quarters generally place the share who have some form of coverage between 26 and 35 per cent. Those individuals who are age 65 and who are still actually employed in an organization with group coverage, as a general rule, continue to have their coverage without modification. A number of the very large companies provide some form of health insurance benefits to their retired employees, but these benefits are, for the most part, restricted through a reduction of benefits or by the imposition of a lifetime ceiling on the amount of money available. Practically no major medical insurance has been available for the retired group.

We have no accurate figures concerning the cost of medical care for people over age 65, but it has been estimated that the figure would be from two to four times that for the age group below 65. If these estimates are reasonably accurate, it is evident that adequate insurance protection for this

* Spiegelman, M.: Insuring the older ages. Metropolitan Life Insurance Company, May, 1955.

** Follman, J. F., Jr.: Insuring older age persons. Health Insurance Association of America, November, 1956.

group would require a very high premium and, consequently, the majority of such individuals would not be in a financial position to take care of the cost of the insurance coverage.

In the MANAGEMENT RECORD for November, 1956, Mr. Harland Fox discussed the plight of the retired employee in this connection. He compared the group coverage provided by the commercial carriers with that provided by Blue Cross, and pointed out the differences that exist relative to the retired individual.

For the most part, the group-coverage contracts of the commercial carriers do not contain a conversion privilege whereby the retired individual can continue with the same coverage at the same premium rate. Furthermore, the fact that the individual is covered by commercial group insurance right up to retirement age generally prevents his securing protection from other sources. His alternative is to try before he reaches the retirement age to secure an individual type of contract which will protect him when his group insurance expires. In doing so, he has to pay for duplicate coverage.

The employer who carries Blue Cross for his employees is in a different position, for he usually can assure the employee that he can continue his coverage regardless of his reason for leaving the organization, and that the premium charge after his separation from the group will remain approximately the same as before. The premiums will be slightly higher in the event that he pays them direct, but will remain approximately the same if they are paid through the organization.

Blue Cross, as you know, provides a service contract, and the premium is a community rate which varies according to the expense in the particular community. If the community became overloaded with older people, the premium charge would, of necessity, have to be raised from time to time. We find ourselves face to face with the fact that there are large numbers of people over age 65 in this country who do not have health-insurance protection and who would like to have coverage. It was not available to them during their productive years, and furthermore, very many of our insurance plans have not provided for participation by this group. Contracts which have been available have been restricted as to the benefits provided, and moreover, in order to qualify for coverage, the individual was subject to rather strict underwriting requirements.

PRESENT DAY TRENDS

The methods of financing the cost of medical care of all segments of our population are receiving much consideration at this time. The general public, the government and industry are all vitally interested and are studying the various aspects of this complex problem. The insurance industry is playing a leading role by providing an ever-increasing number of various types of insurance contracts by means of which a large percentage of our population may obtain coverage for the purpose of financing medical care. As a matter of fact, changes in this area are taking place so rapidly that a discussion of this subject today will likely be out of date by the time it is published.

Much attention is directed towards providing a form of coverage which will assist in taking care of the cost of major illnesses. The deductible and co-insurance features embodied in these types of contracts are apparently receiving a warm reception from the general public. There are still certain large groups in our population who disapprove of this principle and are desirous of having an insurance plan which will provide for complete protection, however. We also find that pressure is continually being brought to bear to bring about the financing of the cost of medical care for the age group 65 and over by means of an increase in the Social Security tax.

SOME FUTURE CONSIDERATIONS

For the most part, the financing of medical care has been quite effective during the recent past, except for the older age group. It would seem that some means should be made available whereby the individual could make some provision considerably in advance for the financing of the medical care which it is probable that he will need when he is no longer able to carry on remunerative activities. The insurance industry is the logical place to turn for this type of protection.

Contracts patterned along three general lines would provide this needed protection:

1. A contract which would be fully paid-up when the insured reaches age 65, the usual retirement age
2. A contract carrying a level premium payable throughout the lifetime of the insured
3. A contract which would provide for catastrophic coverage, with suitable deductibles, and which would provide for coverage throughout the lifetime of the insured.

It is possible that by the time this discussion is published, contracts embodying these principles will be available to the general public on both group and individual bases. The success of an insurance program will depend to some extent on whether the individual can secure some protection which will continue throughout his lifetime. We, as physicians, should recognize that insurance, in itself, does not increase the ability of the patient to pay, but rather provides the patient with a means whereby he can deposit funds, over a period of years and along with other individuals, so that when the need arises he will have money for certain types of expenses.

The physician who increases his fees because the individual has insurance is helping to defeat the entire insurance process. Don't kill the goose that lays the golden eggs!

One other feature having to do with coverage should be kept in mind whenever we discuss health-insurance protection. This relates to the inclusion of small, regularly recurring medical expenses in an insurance program. These small charges should not be covered. The policyholder, for the most part, would be merely trading dollars with the insurance carrier. The administrative cost to the carrier for processing these small claims would be out of proportion to the benefit that the policyholder would derive from having them covered.

As physicians, we are vitally concerned in these matters, and it is up to us to lend support to every program which is in the best interests of the public and which will not interfere with the traditional relationship between physician and patient.

Michigan State Medical Society Heeds Public Opinion on PREPAYMENT FOR MEDICAL CARE

In April of this year, in a special session, the House of Delegates of the Michigan State Medical Society authorized the most comprehensive and far-reaching public opinion survey that has ever been conducted for the purpose of learning the public's attitudes on prepaid medical-care insurance. Then at its regular meeting in Grand Rapids on September 25, the Michigan House of Delegates approved an implementation of the findings.

In the survey, 640,000 Michigan citizens were asked their opinions on four major issues: (1) What medical services do people want covered by medical prepayment insurance, and what do they feel should be the order, or priority, of those services? (2) How much will people be willing to budget for those services, and which of them are they most willing to pay for? (3) What do doctors want from any medical insurance plan? and (4) What do people really need in the way of medical services?

Cooperating with the Michigan State Medical Society, the Michigan Health Council sent out 66,500 questionnaires to people who represent various interests and vocations in Michigan. All M.D.'s in the state received the questionnaire, for it was thought that doctors should have an opportunity to indicate how they felt about medical-surgical plans as consumers.

In addition, two newspapers (the DETROIT SUNDAY TIMES and the LANSING JOURNAL) published the questionnaire in full so that their readers could voice their opinions. The combined circulation of those papers, 568,000, plus 66,500 mailed questionnaires makes a total of 634,000. A second list of questions was mailed to Michigan M.D.'s who number approximately 6,000. This special doctor-opinion survey was more technical. It covered such things as administration of major medical and surgical prepayment plans and health insurance policies, subscriber contract arrangements and methods of payment. Lastly, 1,000 personal interviews were conducted throughout Michigan by the Market Opinion Research Commission, of Detroit. These personal interviews provided more detailed information than had been obtained through the mailed and published questionnaires.

GENERAL INFORMATION SECURED

An overwhelming majority of the people of Michigan (81 per cent) were shown to have some type of insurance to protect themselves against unpredictable medical expense.

Just over a third of the relatively small number without health insurance claim they lack it because it's too expensive for them.

In Michigan, 64.6 per cent of those insured at all are covered by Blue Shield, more than twice as many people as are covered by all other health insurance plans combined. All or part of medical insurance premiums are paid by employers for half of the Michigan policyholders, and employers pay the entire premiums for about a third of this group. Two-thirds of these people said they would be willing to pay an additional premium themselves to get any added benefits they would like in their group contracts. One third were unwilling to pay any added premium to get benefits not paid for by their employers.

Nearly three people out of four have called upon their insurance companies for policy benefits.

Of those making use of their insurance, 61 per cent had had to pay additional amounts over and above those paid for them by the insurance companies. Slightly more than half of the extra charges were for doctors' fees, and less than half were for services not covered in their policies. X-ray was the major service, second to doctors' fees, for which they had had to pay extra (17 to 19 per cent of the time). Half of the people said they had paid less than $50 for medical expense over and above the amount paid by the insurance company the last time they used their policies.

People want their policies to cover x-ray services, either in doctors' offices or in the outpatient departments of hospitals. The four benefits in which they showed most interest were (1) emer-

gency house calls, (2) diagnostic services in doctors' offices, (3) x-ray in hospital outpatient departments, and (4) diagnostic x-ray in doctors' offices. Farmers were least interested in adding any of those benefits.

IF THEY COULD CHOOSE FOR THEMSELVES—

The people who were interviewed were allowed to make up hypothetical policies for themselves by selecting benefits from a complete list of possible services in hospitals, doctors' offices and private homes. Everyone in all three classifications (family plan, self-and-spouse, and single individual) wanted three in-hospitals benefits in particular. Surgical led the list. Diagnostic x-rays were second, and medical visits in the hospital were third.

As regards services in doctors' offices, all were most desirous of emergency first-aid coverage. The second selection was minor surgical treatment. Relatively fewer people were interested in coverage for medical services in their homes. Less than half wanted house calls covered, and about the same number wanted coverage for ambulance service too.

The benefits selected by those interested in a hypothetical "family" plan would cost $11.24 per month. The price for the "self-and-spouse" plan was $8.75, and the cost of the "single" plan was $3.26. The price tags on these plans differed, of course, in proportion to the number of people covered, as well as according to the benefits included.

Union members developed hypothetical policies which cost slightly more than those formulated by non-union people. Union members chose a family plan costing 62 cents more, and a self-and-spouse plan costing 75 cents more. The "single" plan that they chose would, however, cost exactly the same as that chosen by non-union people.

A comparison of the selections made by people of different income groups revealed that those making over $5,000 a year wanted a family policy costing only 60 cents more than that selected by people making less than $5,000 a year. The better-paid group wanted a self-and-spouse plan costing 23 cents more, and a "single" plan costing 3 cents *less* than that chosen by less well-paid individuals.

Rather than eliminate services from the hypothetical policies they had formulated, three-fourths of the people preferred to pay for all of the benefits in their original selections. Only 11 per cent of those in the self-and-spouse class were willing to forego x-rays in the outpatient departments of hospitals, and even smaller percentages of those in the various classifications were willing to pass up coverage for other services. Of those in the family-plan category, only nine per cent were willing to eliminate diagnostic x-ray in hospital outpatient departments, and even fewer were willing to forego other benefits.

After cancelling certain coverages to bring costs down, the people interviewed arrived at plans that stacked up like this, pricewise. The family plan had been reduced from $11.24 to $10.09; the self-and-spouse plan from $8.75 to $7.65; and the "single" plan from $3.26 to $3.12. In every case, union members were willing to pay an average of 33 cents more than non-union people for the services they wanted.

DEDUCTIBLE VS. FULL-COVERAGE

Forty-seven per cent of the people favored the idea of a deductible type of medical-surgical insurance plan, and 53 per cent opposed it. Of those in favor, a little less than half were willing to pay the first $25 of medical expense; about a third were willing to pay up to $50; and slightly more than 10 per cent were willing to pay the first $100. A two-thirds majority of both farm and labor-organization members who wished a deductible arrangement wanted a $25 plan, as did the same share of people making less than $5,000 per year.

Two-thirds of the people wanted their prepaid medical plan to cover both major and minor items of expense.

A majority of the people (78 per cent) preferred having the insurance company pay the doctor directly.

MISUNDERSTANDINGS ABOUT THEIR OWN CONTRACTS

When people were asked about what they thought their present insurance contracts provided, they were found to be wrong in some important particulars. Of the policyholders, 95.8 per cent knew they had surgical benefits; 93.9 per cent knew they were covered for obstetrics; 83.6 per cent were correct in thinking they had diagnostic x-ray; 65 per cent thought medical visits in the hospital were included. But only 44.4 per cent—less than half—knew definitely that they had the benefit of emergency first-aid in a doctor's office. More seriously, only 27.8 per cent knew that they were covered for 19 surgical procedures in doctors' offices. Yet the maximum contract covers all of these things.

Then they were asked what else they thought they had. Nearly half (45 per cent) assumed that they had diagnostic benefits other than x-ray; 42 per cent assumed that the insurance company undertook to pay the surgical assistant; 36 per cent thought they were covered when their doctor brought in another physician for consultation; 34 per cent expected their insurance to cover pre- and postnatal care in the doctor's office; and finally, 32 per cent thought that outpatient diagnostic x-ray was covered. But none of these benefits are covered by existing Blue Shield contracts.

ATTITUDES TOWARD CARRIERS

A majority of people (64 per cent) were found to have a favorable opinion of Blue Shield. Only 10 per cent had unfavorable attitudes toward the plan, and one-fourth had no opinion. The majority

of union members felt favorably disposed toward Blue Shield. In fact, the share of union members who felt favorably toward Blue Shield exceeded by two percentage points the share of people generally who held that attitude. Of the small percentage of people who regarded Blue Shield unfavorably, two-thirds felt that its rates were too high, and only one-third complained about its coverages.

The policyholders of Company "A" were asked to express the opinion they had formed about their company. More than three-fourths regarded it favorably. One-fourth of all people—policyholders or not—who were asked their opinion of Company "A" said they had a favorable attitude toward it. Two-thirds had no opinion, and of the 12 per cent who regarded it unfavorably, half felt the company misrepresented its policy and had a poor claim-paying record. Less than 10 per cent complained about poor coverage and high rates.

Half of the policyholders in Company "B" had a favorable opinion of the organization, but slightly more than 40 per cent had no opinion. Out of the one-fourth of all people, policyholders or not, who had any opinion about Company "B" (three-fourths had no attitude at all), two-fifths were unfavorably disposed toward it. Half of them felt it had a poor claim-paying record; one-third thought it misrepresented its policy and gave poor coverage; and the rest (14 per cent) complained about rates.

ANSWERS TO QUESTIONS ASKED ONLY OF DOCTORS

Of the more technical questionnaires that were sent only to physicians, one-third were returned by general practitioners, 13 per cent by internists, 12 per cent by surgeons, and the rest by specialists of 17 other types. One-third of the replying doctors lived in cities having populations of more than 500,000, and 6 per cent lived in towns of fewer than 2,500 people. Eighty per cent of them participate in at least one of the two Blue Shield income-limit contracts, and 68 per cent of them participate in both.

From their answers to questions, it was evident that 28 per cent of Michigan's M.D.'s feel that the administration of the major medical and surgical prepayment plans should remain in the hands of the medical profession and the commercial carriers on a competitive basis, as it exists today. One-third felt that the plan should be administered by qualified laymen retained by the medical profession. Another third felt that the medical profession itself should administer the program.

Nearly two-thirds of the doctors believe that the profession in Michigan is not being given sufficient voice at the local level in determining Blue Shield policies. Half of them don't think they have enough to say about Blue Shield policies at the state level. They feel that county medical societies and specialty groups should have more to say about policy matters.

Almost three-quarters of the doctors agreed that the House of Delegates of the State Medical Society should elect the Blue Shield Board of Directors.

The majority (60 per cent) thought that the Board of Directors of Blue Shield should include representatives from groups outside the medical profession. Slightly more than three-fourths of that majority felt that industrial management should be represented, and just under three-fourths thought that labor should be represented.

Doctors felt that some supervisory control should be placed over the medical care provided under medical insurance plans. More than half of them said that the medical profession should exercise that control, but 45 per cent said that such control should be vested in a board made up of laymen and doctors.

Committees to oversee the utilization of Blue Shield benefits were favored by 75 per cent. The size of his community seemed not to be a factor in determining a doctor's opinion on this point. Most men seemed of the opinion that this supervision should be a county medical society function, but a little over one-third thought that hospital staffs should have the responsibility.

The great majority of doctors (83 per cent) felt that full-service contracts should *not* be limited to people with incomes of less than $5,000 per year. Sixty per cent favored offering a $7,500-limit contract at an appropriate premium and fee schedule. One-third of them recommended that such a contract be added to the $5,000 and $2,500 contracts that are currently offered in Michigan, and 68 per cent advocated that the fee schedule for the new contract be set at 132 per cent of that now in use for the $5,000 contract. Seventy per cent feel that the present $2,500 contract should be retained, but they do not think that it should be sold to people in higher income brackets as, in effect, indemnity medical insurance coverage.

More than half of both the generalists and specialists agreed that Blue Shield should not offer a contract which would include all professional services.

If outpatient diagnostic benefits were added to Blue Shield contracts, almost half of the doctors thought that this benefit should cover the treatments given in doctors' offices. About 10 per cent fewer doctors felt that payment should be made only when the service is provided in hospital outpatient departments and certified laboratories.

Just about three-fourths of the doctors believe that insurance benefits should provide for consultation. Ten per cent more specialists than generalists are of this opinion.

Doctors were about evenly divided on whether the present 24-hour limitation on first-aid treatment should be increased. Of those who favored increasing the time, two-thirds thought the limit should be set at 48 hours.

A majority of the physicians do not believe that

Blue Shield should offer hospital coverage on an indemnity basis, nor do they believe that it should offer such things as life insurance, disability protection, etc., as well as medical-service coverage.

A resounding majority (83 per cent) said they do not object to reporting their total charges for each case on the service report form submitted to Blue Shield. Sixty-three per cent said that they regarded the "usual" fee in the community as the most important factor in determining the value of their services, regardless of whether the patient is non-insured or is one whose income exceeds the limits of his Blue Shield contract.

Sixty-five per cent of the doctors feel that Blue Shield premiums should be raised on a selective basis, and 69 per cent feel that Blue Shield should adjust its premiums and fee schedules as living costs vary, both geographically and from time to time.

On whether Blue Shield should pay different amounts to generalists and to specialists for the same category of treatment, 90 per cent of general practitioners favor one schedule for all, and 60 per cent of specialists feel that there should be a difference.

Provided that the patient knows of the payment, 82 per cent of the doctors said that assisting surgeons should be paid by Blue Shield. Ninety-two per cent of the generalists and 75 per cent of the specialists agreed to this. Of those agreeing, 47 per cent thought such payments should be made in all hospitals, 42 per cent favored separate allowances for the assisting surgeon based on a percentage of the surgical fee paid to the surgeon in charge, 37 per cent favored separate allowances for the assisting surgeons based on flat rates for major and minor surgery, and 35 per cent thought they should be paid only in hospitals without interns and residents.

More than half of the doctors said their incomes had been increased by Blue Shield because of better collections. But 81 per cent said they thought their colleagues are dissatisfied with Blue Shield fees. This answer was given most frequently by doctors in cities having populations between 100,000 and 500,000.

Slightly over half of the doctors felt that Blue Shield subscribers should receive a roster of participating physicians, provided that such a list can ethically be made available to them.

Eighty-two per cent of the doctors felt that Blue Shield offerings to subscribers should include deductible or co-insurance policies as well as full-pay policies.

GENERAL CONCLUSIONS DRAWN FROM THE SURVEY

1. Insurance companies and voluntary prepayment plans offering service coverage need to establish better lines of communication with their subscribers. They must explain what benefits are available in policies or contracts, and what those benefits cost, because the public generally does not know.

2. People are generally satisfied with the coverage they now have. They do want more coverage, but are not unanimous in their choices of added benefits.

3. People will pay a reasonable increase in premium for the added benefits that they prefer most. The survey indicated that people are willing to pay as much as $6.95 per month for self-formulated hypothetical policies.

4. A large number of people (47 per cent) favor a deductible type of policy in order to reduce monthly premium costs, but the survey revealed that there is no overwhelming demand for it.

5. The returns from the techincal questionnaire sent to Michigan doctors indicated that a majority of the profession there favors (a) the offering of a $7,500 income limit, full-service Blue Shield policy in addition to the present $2,500 and $5,000 ones; (b) a revision in Blue Shield fee schedules on a selective basis; (c) the issuance of deductible or co-insurance policies; and (d) the establishment of committees at the local level to oversee the utilization of Blue Shield benefits.

MSMS IMPLEMENTATION OF SURVEY FINDINGS

At its meeting in Grand Rapids on September 25, the Michigan State Medical Society undertook to implement the above-listed general conclusions.

First, it set up machinery by which the Society will examine and endorse prepaid medical-care contracts—i.e., full-service ones—that are offered to the people of Michigan both by commercial carriers and by Blue Shield, and will use its best efforts to secure participation by its member physicians in all of those to which it gives its endorsement. For that purpose, it set up a Medical Care Insurance Committee at the state level, and will undertake to develop review committees in each of its councilor districts to keep smooth the relations of subscribers, physicians and carriers.

Second, the Michigan Society adopted the following set of principles for its guidance in granting endorsement to insurance contracts:

1. There must be complete freedom of choice of physician by the patient. Nothing in any contract will imply any restriction of this principle.

2. All benefits will be on a service basis consistent with the principles set forth [hereafter in the section on "Basis of Service Benefits"] except when a subscriber voluntarily occupies a private room in a hospital.

3. The following services must be included in any basic program

(A) Surgical procedures, wherever performed

(B) Medical services when the patient is confined in a hospital

(C) Consultation service in the hospital; surgical assistants where required

(D) Obstetrical services for the actual pro-

cedure of normal delivery, cesarean section or abortion, and complications of pregnancy, but not routine pre- and postnatal care (Optional supplemental insurance by the carrier to cover all obstetrical costs may be offered as provided in No. 4 below).

(E) Anesthesia by physician not an employee of a hospital

(F) Diagnostic laboratory procedures in the outpatient department of a hospital, a private laboratory or in a physician's office (screening procedures excluded)

(G) Diagnostic and therapeutic radiologic procedures provided in a hospital, in an outpatient department or in a physician's office.

4. At the option of the carrier, additional coverage may be provided for other medical services and supplies such as

(A) Home and office calls

(B) Benefits for prescriptions filled by a registered pharmacist

(C) The furnishing of prosthetic devices

(D) Physiotherapy in the outpatient department of a hospital or in a physician's office

(E) Other services which may be required in the treatment of the patient.

5. (A) For any necessary service other than in-hospital medical care, surgical care, obstetrical care and anesthesia, the subscriber shall have, at the time of utilization, a degree of financial participation in and responsibility for medical fees in addition to his premium. This shall be determined by the carrier, but the responsibility of the patient shall not be less than 10 per cent or $5.00, whichever is more, but not in excess of the scheduled fee allowance. In accordance with the terms of the contract, this amount shall become the obligation of the patient to the physician at the time of service and will be subtracted by the carrier from the payment for service it shall make to the physician. For any calendar year, however, patient participation shall not exceed the following:

Subscriber's Plan	*Limit of Participation by Subscriber per Year*
$2,500 Plan	$25
$5,000 Plan	$50
$7,500 Plan	$75

(B) While the provisions in "A" above are strongly urged by the Michigan State Medical Society, any carrier may have the option of waiving them by a rider to provide for coverage without subscriber contribution.

6. There shall be three contracts to be known as Plans A, B and C. Each shall apply to a specific income level and will provide service benefits. The income level shall be determined by a projection of the current rate of earnings of the basic wage-earner in the family and not by family income. Where the basic income is not readily to be determined and established (as for the self-employed, farmers, salesmen on commission, etc.), the Committee on Medical Care Insurance of the Michigan State Medical Society shall develop appropriate criteria for determining eligibility for service benefits.

(A) Plan A will provide full-service benefits for those subscribers whose basic income is less than $2,500.

(B) Plan B will provide full-service benefits for those subscribers whose basic income is $2,500 but less than $5,000.

(C) Plan C will provide full-service benefits for those subscribers whose basic income is $5,000 but less than $7,500. Those subscribers whose income is in excess of $7,500 may purchase only plan C. In this event the total fee shall be the result of agreement between the patient and his physician. The Plan will pay the applicable "Dollar Allowance" to the physician.

7. The insurance carrier shall be responsible for classification of subscribers and appropriate designation of the Plan in which they must be enrolled. Income designation shall reflect the subscriber's current rate of pay projected on an annual basis. This designation shall be reviewed annually and changed as indicated by the review.

BASIS OF SERVICE BENEFITS

1. The Michigan State Medical Society will develop a "Relative Value Scale" which will assign to the individual surgical, obstetrical and other medical service a value in units proportional to the relative value of that service. The Society will determine the applicable value of one unit for each class of benefit. By multiplying the number of units assigned to a procedure by the value of one unit, the "Dollar Allowance" for that procedure is obtained.

2. (A) The Michigan State Medical Society will establish unit values for medical, surgical and obstetrical procedures and anesthesia for each of the plans.

(B) For diagnostic laboratory procedures and for all radiologic procedures, the unit value for all Plans will be the same.

(C) For any optional benefits offered by a carrier, the Society will establish appropriate unit values.

3. Until the Michigan State Medical Society establishes a "Relative Value Scale," the scale developed by the California Medical Association shall be used.

4. No participating physician may charge more for a particular service rendered a subscriber than the "Dollar Allowance" payable for that service under the subscriber's contract. A subscriber covered by Plan C whose income is designated as in excess of $7,500, however, shall be responsible for any part of fees to which he agrees with his physician in excess of the applicable "Dollar Allowance."

Scientific Articles

Management of Common Arrhythmias

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No one in the practice of medicine can afford to be ignorant of the cardiac irregularities. Moreover, they may prove to be so urgent that one cannot take time to mail the tracings to a colleague in another city for an interpretation.

COMMON TYPES OF ARRHYTHMIAS

By all odds the commonest arryhthmia is the *premature beat,* more often ventricular than atrial. This, like almost all of the other irregularities, does occur in otherwise normal hearts. Should it be treated? If the patient is unaware of the premature beat and if it is infrequent, then no treatment is necessary. If the patient is apprehensive about his condition, try the simpler things first. Instruct the patient to stop drinking coffee or soft drinks, or to stop smoking. To eliminate the cause is always a sound approach. For example, my wife had frequent and bothersome premature ventricular beats when she was last pregnant. When she eliminated the pregnancy, the premature beats disappeared. Mild sedatives in the anxious person are helpful. Curiously, I have found no medical reports in the literature recommending tranquilizers for this purpose. Two cardiac drugs are helpful if the condition requires more vigorous treatment. Procaine amide (Pronestyl®) is the drug of choice for ventricular premature beats; quinidine is next best. If the ventricular premature beats occur during digitalis therapy, the possibility of digitalis toxicity should be considered. Oral potassium chloride is the most effective antidote.

If atrial premature beats are frequent and it is feared the patient may soon develop atrial fibrillation, small doses of quinidine may be used in the hope of forestalling the more serious fibrillation. Premature beats following infarction or in the course of rheumatic mitral stenosis are two clinical states where this is apt to occur.

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The second arrhythmia is similar to the first in that there is a pause between beats. In *sinus arrest,* however, no premature beat precedes the pause. One notes that all impulses simply drop out for a variable period until the beat resumes with an "escape beat." This is probably due to the same heightened vagal tone that causes sinus arrhythmia. It can cause momentary periods of faintness. If your patient has such a complaint, you may be able to reproduce it through vagal stimulation by pressure on the carotid sinus. Atropine or Banthine® will abolish sinus arrest, and the same can be done with other ganglionic or vagal blocking agents.

A contrary rhythm is *paroxysmal atrial tachycardia.* Whether supraventricular tachycardias have their origin in the atrium, in which case the P waves can be seen on the ECG, or in the AV node, in which case the P waves may be "buried" in the QRS, makes little difference in treatment. In this condition the vagus must be stimulated, the opposite of the second arrhythmia. This is done by the Valsalva maneuver, by gagging or by unilateral carotid sinus massage. I advise against eyeball pressure (the oculocardiac reflex) and against bilateral carotid pressure. If drugs become necessary, it is logical to expect those which heighten vagal tone to be most helpful. Thus neostigmine (Prostigmine®) and digitalis are front runners. Some patients get severe cramps from neostigmine, but I have seen nothing more serious. Too few of us realize its value. Mecholyl® should be abandoned because of its severe side effects. Any of the digitalis preparations may be satisfactory. However, if there is an urgent situation, we use Cedilanid® intravenously. Not all patients react identically. For some, procaine amide may be better, or neosynephrine or quinidine. Most men in general practice favor quinidine as the drug of choice over all others, but cardiologists generally rate it somewhere down the list.

For prevention of recurrent attacks, elimination

of coffee, tobacco or "stimulants" may suffice. Mild sedation often helps. Maintenance digitalis may be required in stubborn cases.

Although the next condition is not an arrhythmia, it should be familiar to all of us because patients who have it (and it may be irregularly present) are prone to paroxysmal atrial tachycardia. It it variously known as the Wolf-Parkinson-White syndrome, the false bundle branch block and the short PR wide QRS syndrome. The latter designation describes it electrocardiographically. It occurs in hearts otherwise normal, and it does not cause any symptoms of itself, nor is there any known treatment for it.

Atrial flutter, on the other hand, usually occurs in diseased hearts. In most cases a block at the atrioventricular junction prevents half or more of the impulses from reaching the ventricle. Thus, we say a 4:1 or 2:1 block exists. Nearly everyone agrees on the treatment. First, digitalize. One of three results will be noted: (a) the degree of AV block will increase, e.g., from 4:1 to 2:1; (b) there will be a direct conversion to sinus mechanism; or (c) there will be atrial fibrillation. In the event of the last, give quinidine after a couple of days. Procaine amide has been successful here also, as it is in almost every rhythm with increased myocardial excitability. It should not be used concomitantly with quinidine.

Atrial fibrillation, when it occurs in association with body tremor, suggests hyperthyroidism. It is possible for this arrhythmia to exist in perfectly normal hearts, and we frequently see students in school who have episodes of paroxysmal atrial fibrillation but no other detectable heart disease. In these persons the arrhythmia does not cause failure, but it does put the heart at a functional disadvantage, and the patient ordinarily has palpitation, especially after exertion. The most typical occurrence of this paroxysmal fibrillation, however, is in the presence of rheumatic heart disease, particularly with mitral valve involvement. The larger the atria, the more likely there is to be fibrillation. This arrhythmia also occurs with various kinds of degenerative heart disease, with coronary atherosclerosis and hypertension.

CONVERSION TECHNIC

Let us assume that we have a patient who is favorable for conversion. How are we going to proceed? In general, it is a wise policy to have patients digitalized before attempting a conversion, especially if the ventricular rate is rapid. Although large or toxic amounts of digitalis increase the dangers with quinidine and may prolong fibrillation, if the digitalis is kept in the therapeutic and not in the toxic range, there is no increased hazard in the use of quinidine with it. If the fibrillation is acute, if contraindications to digitalis are present, or if the ventricular rate is already slow, there probably is no need for digitalis. We know that the ratio between toxic and therapeutic amounts of digitalis decreases as heart failure proceeds, and also excretion of digitalis is reduced in the older patient and in the patient with heart failure, so that a toxic amount of digitalis is more readily achieved.

In the presence of acute fibrillation, probably the overall best results are achieved with quinidine, although procaine amide (Pronestyl®) has a similar therapeutic effect. I believe quinidine should be used first, and if unsuccessful, then procaine amide may be tried. With quinidine, the fibrillatory rate of the atria slows about as rapidly as the blood level of quinidine rises. Since the blood level is at its peak in about two hours, it is logical to administer the quinidine dosage at two-hour intervals. The dosage recommended, therefore, is three grains orally (0.2 Gm.) at the beginning, and it should be given five times, at two-hour intervals, during the day. It is not necessary to give a "test dose" prior to this regimen. The patient is allowed to rest at night without additional medication, and it sometimes happens that the reversion occurs in the middle of the night at a point when the quinidine level is not necessarily at its highest. Often sedation at night helps, or in the elderly, oxygen. If three grains (0.2 Gm.) at two-hour intervals for five doses on the first day proves ineffective, the same routine should be repeated the next day with twice the dose (six grains or 0.4 Gm.) for five doses. Before each dose is administered, the rate should be checked to see whether or not it has become regular. Again, if unsuccessful, one can administer nine grains (0.6 Gm.) on the third day. It is not wise to go above that level in most cases.

Because there is some accumulation over a period of four or five days, it is well to repeat this same dosage (nine grains or 0.6 Gm.) every two hours for five doses for that period. It is possible to go higher than this if one has facilities to check blood levels, or if no toxicity is manifested.

MAINTENANCE OF CONVERSION

Do these patients retain their reversion after they are once converted? Usually, yes. The maintenance of sinus rhythm is effective in up to 90 per cent of those in whom we can initially make a satisfactory conversion, provided that quinidine is continued. A mistake is often made, I think, in not continuing the quinidine, once the patient has been treated, particularly since the dosage required for the maintenance of sinus rhythm is less than that required for conversion to sinus rhythm. How long the patient should stay on quinidine is questionable. There is no great hazard in continuing the quinidine indefinitely at a rate, let us say, of three grains (0.2 Gm.), three or four times a day, or even at double that dose.

NEW KINDS OF ARRHYTHMIA

Recently, I saw a patient who had an irregular irregularity which seemed to be an atrial fibrilla-

tion. An ECG, however, showed it to be a *paroxysmal atrial tachycardia with AV block,* mostly 2:1, A serum level of potassium was 2.5 mEq. This arrhythmia is not well known to physicians, yet it is common in modern practice, which emphasizes prolonged mercurial diuresis, low-salt diets and parenteral feedings after operations. Its importance is that digitalis is contraindicated while potassium administration is a specific remedy.

Ventricular tachycardia also occurs in patients with sick hearts, although not exclusively so. Paroxysmal beats of this type are common during cardiac catheterization, and in such a situation the remedy is to withdraw the catheter from the area being stimulated by its tip. Spontaneous paroxysms are seen most commonly after myocardial infarction. The drug of choice is procaine amide (Pronestyl®), although quinidine runs a close second. If the patient develops syncope with such attacks, a drug like Isuprel® may be safer. If uncontrolled, heart fatigue develops, and ventricular fibrillation may be precipitated.

CONCLUDING REMARKS

A cursory glance at drugs useful in arrhythmias might lead one to wonder whether it is necessary to take ECG tracings and try various drugs "scientifically." Why not "give everyone quinidine and if that doesn't work, give procaine amide"? This philosophical question deserves a philosophical answer. Every patient is unique in his responses. There is no single "best drug." For every arrhythmia in which there is a drug of choice, another arrhythmia may contraindicate that drug. On the contrary, I urge you to take a thorough interest in these rhythms. No crossword puzzle, no whodunit, no poker game will prove more fascinating, and of course, the stakes are never higher.

Diverticulitis

LEWIS L. ZAGER, M.D.

WATERLOO

Nowadays most authors agree that between 20 and 40 per cent of persons past the age of 40 who have x-ray examinations of the colon will show some evidence of diverticulitis. Since approximately 25 per cent of persons with diverticula will at some time evidence symptoms of diverticulitis, and in view of the fact that the average age of our population is advancing quite rapidly, it is apparent that diverticulitis is changing from a comparatively rare disease to a common one.

ETIOLOGY

Diverticuloses, by definition, are saccular protrusions of the colonic wall uncomplicated by inflammation. When the diverticula become involved by inflammation or other complications, diverticulitis occurs.

The cause of diverticulosis is unknown, but it does appear that obesity and constipation play significant roles in it. It is possible that a weakening of the gut wall and saccular bulging are a consequence of the degenerative changes of advancing age. These diverticula are of the false or acquired variety, the wall of the diverticula consisting of mucosa, sub-mucosa and serosa. The mucosal sacs protrude through the muscularis near the mesenteric border, and the diverticula form where the gut wall is weakened by the entry of blood vessels into the colon. The arteries of the mesentery divide into two branches as they enter the intestine, and separate before piercing the circular muscle. Thus, diverticula occur in pairs at the edge of the lateral longitudinal muscle bands. Their size varies from one to three centimeters, but if inflamed they may be larger. They are round at first, but become flask-shaped as they grow larger. Semi-liquid or liquid stools and fecal material get into the sac and become inspissated, thus destroying the mucosa and admitting infection. Then there is edema, the blood supply becomes compromised and gangrene of the wall occurs. The uninflamed diverticula are only normal mucosa and serosa, but with infection there is leukocytic infiltration of the walls, with atrophy of the mucosa and thickening of the serosa. Fibrous involvement of the sub-mucosa and muscularis may result in a narrowing of the neck of the diverticulum, causing partial or complete obstruction.

Diverticula occur most frequently in the sigmoid colon and in the lower stretches of the large gut. The disease does not occur in the rectum because the longitudinal muscle fibers there form a continuous strengthening sheath over the entire circumference. Diverticulosis usually spreads proximally, taking advantage of the gaps between the longitudinal muscle bands, and may involve the entire colon.

SYMPTOMS

The symptoms of colonic diverticulosis are extremely varied, and uncomplicated diverticulosis may be entirely asymptomatic. Symptoms usually consist of the following: (1) alteration in bowel function; (2) abdominal distress; (3) constipation; (4) diarrhea; (5) flatulence; and (6) pain.

The pain or discomfort is usually located below the umbilicus, and most often on the left side. In people with redundant sigmoid colons, however, it may be in the midline, in the right lower quad-

rant or even in the periumbilical area. The typical case of pain and discomfort in the left lower quadrant has led many authors to call diverticulitis "left-sided appendicitis."

Bouts of constipation associated with a dull ache in the left lower quadrant may be separated by long intervals or remissions of symptoms, during which the patient has normal bowel activity. Diarrhea may arise, but it is uncommon except in an acute flare-up of the disease. Sudden acute intestinal obstruction may be the first evidence of the presence of chronic or acute diverticulitis. Differentiating between diverticulitis and obstruction by sigmoid carcinoma may be difficult, but the more sudden and unheralded the stoppage, the more likely it is to be diverticulitis.

If you have a patient who develops large-bowel obstruction without having shown any previous symptoms of bowel habit change, bleeding or weight loss, you are much more likely to be dealing with diverticulitis than with carcinoma. The present day use of antibiotics and chemotherapeutic agents has changed the therapy of both medical and surgical complications, but the complications of diverticulitis are being treated more and more aggressively, for through surgery it is possible to avoid severe complications and to save many patients from semi-invalidism. Better anesthesia and pre- and postoperative care have helped to bring the risk of curative surgical procedures in such cases to a low figure.

Most cases of diverticulosis are now diagnosed in the asymptomatic stages by barium enema. The air-contrast enema is also important, for it will frequently demonstrate many more diverticula than were noted on the barium enema film alone.

MEDICAL MANAGEMENT

Patients with asymptomatic diverticulosis require no active treatment. It is important, however, to urge their observance of certain prophylactic measures such as the avoidance of constipation, adequate intake of fluids and keeping the stools soft but not liquid.

The major dietary restriction is the elimination of coarse food, fibers and skins, because undigested particles of food are a source of irritation when they reach the colon. Patients should avoid pithy fibers of citrus fruit, fruit skins, nuts, bran, seeds and roughage. Excessive use of condiments should be avoided. Mineral oil or a similar preparation should be taken at bed time. Acute exacerbations consisting of left lower quadrant pain, minimal fever, constipation and leukocytosis, can be treated conservatively and managed medically through the following regimen:

- Bed rest
- Heat to the abdomen
- Antispasmodics
- Intravenous fluids if there is vomiting
- Sedation
- Antibiotics (by mouth or parenterally, depending on whether or not there is vomiting)
- Liquid diet
- Analgesics

SURGICAL TREATMENT

It is generally agreed that surgery is indicated in the complications of diverticulitis. They include (1) repeated illness in the absence of specific complications; (2) perforation; (3) fistula formation; (4) abscess; (5) stricture; (6) hemorrhage; (7) peridiverticulitis with adhesions; and (8) carcinoma.

Surgery may likewise be indicated when the differential diagnosis of perforated duodenal ulcer, twisted ovarian cyst or ruptured ectopic pregnancy cannot be ruled out.

More and more, it is the attitude of doctors today that the best treatment for diverticulitis is a carefully planned surgical removal of the diseased colon before complications develop. This attitude is very commendable, but it has one important shortcoming—that in many cases diverticulitis is not diagnosed until after one or more of the serious complications have occurred. Consequently, I think we must say that definitive surgical treatment, consisting of a carefully planned removal of the diseased colon, must be very seriously considered when a true complication has occurred. This, I think, sums up the opinion today in regard to the treatment of diverticulitis by surgical methods. Yet, since we should never generalize completely in Medicine, we must consider each patient individually, rather than treat according to any rules or rigid ideas.

COMPLICATIONS

Perforation. This is the most frequent complication requiring operation, and it is also the most frequent cause of death from diverticulitis. Small, slow-forming, walled-off perforations may be controlled medically, but even if the first episode is controlled, recurrence and future complications are quite common.

The treatment of perforation depends of course, upon the findings prior to and at the time of laparotomy. There can certainly be no set rule as to what should be done when the abdomen is entered. One may get into an abdomen and find an acute perforation of a diverticulum without inflammation or with only minimal inflammation. The bowel may be quite freely movable and not edematous. In that case one could simply close the perforation primarily, very much as one would close a perforated duodenal ulcer by using either 000 chromic or 000 silk sutures because in these cases the wall of the colon is not friable and lends itself well to primary closure. One would proceed quite differently, however, if on entering the abdomen he were to find a large, fixed, edematous mass in the sigmoid that oozed serum, purulent matter and even fecal material. In that case he would of course either exteriorize the bowel locally, making no attempt to do a primary resection or closure, or do nothing locally and undertake a transverse colostomy instead. It is my own feeling—and indeed it has been my experience—that it is better

in such cases to do a transverse colostomy as a palliative, life-saving measure, and leave further, definitive treatment for later consideration.

Small-bowel obstructions, either partial or complete, can be serious complications of acute perforation and peritonitis or abscess. When small-bowel obstruction occurs in association with diverticulitis, prompt surgical measures must be undertaken to correct the obstruction. In any event, resection of the involved bowel must be considered after the primary episode has subsided. Neomycin locally, as well as streptomycin and penicillin parenterally, can be used in addition to other well-known forms of supportive therapy such as Wangensteen suction, oxygen, adequate fluids and sedation. On further definitive therapy, I prefer resection of the diseased colon, end-to-end anastomosis, and then—approximately six weeks later—closure of the transverse colostomy. I have done a primary resection of a perforated diverticulitis only in chronic cases when there was a freely movable mass, when the bowel could be freely mobilized and when I felt that after resecting the diseased segment I could be certain of anastamosing normal bowel both proximally and distally.

Fistula formation. This complication is frequently associated with abscess formation and considerable inflammatory reaction. A fistula appears to be caused by a slow perforation, with marked peridiverticulitis and by adhesion of the colon to a viscus, to the abdominal wall or to the adjacent small bowel. It is obvious that a fistula can form between the colon and any of the intra-abdominal organs, but most frequently it occurs between the bladder and the colon in males, and between the colon and either the uterus or the fallopian tubes in females. After the inflammation of the fistula has subsided, it seems to me that treatment should consist simply of a transverse colostomy and a resection of the diseased bowel, with removal of the fistula and repair of the involved viscus. Closure of the colostomy is the third stage. I know that certain authors are advocating primary resection and end-to-end anastomosis of the involved bowel, but I feel that it is safer to do a transverse colostomy and then a resection.

Stricture. Stricture usually occurs as a result of repeated attacks of inflammation causing a fibrotic, edematous, granulomatous stenosis. One episode of obstruction, I believe, is a sufficient indication for resection. It seems to me that an acute and unheralded obstruction is more likely to indicate diverticulitis than carcinoma, although one cannot always be certain. In an acute episode of obstruction, one must of course do a transverse colostomy as a palliative procedure and then follow it by a resection of the diseased bowel. We feel that in all but a few cases the radiologist with whom we work can be quite certain as to whether a stricture in the colon is due to carcinoma or to diverticulitis, and we gauge the radicality of our procedure accordingly.

Hemorrhage. Hemorrhage is now known to complicate diverticulosis and diverticulitis, and it can be a very serious complication. The bleeding may be profuse, and the patient may go into shock. Most of these cases, however, can be handled in the acute stage by means of blood transfusions, bed rest and sedation, and when the acute episode has been controlled, definitive surgery can be carried out.

In a good-risk patient, a segmental resection of the involved area can be performed, but in a critically ill one, the stoppage of bleeding by means of a transverse colostomy may be life-saving. At times it may be very difficult to find the area from which the blood is coming, and often one must eliminate the possibility of bleeding from the esophagus, stomach or small bowel before resecting the colon.

SUMMARY

I think it necessary to stress again that diverticulitis is a relatively common disease, and that it calls for a more radical surgical approach than was justifiable in the past. A low mortality and morbidity have been made possible through the control of the bacterial flora, improved nutrition and electrolyte replacement at the time of surgery.

After reading over many articles on the subject, it seems to me that there has been a greater mortality in primary resection and a one-stage operation than in a three-stage procedure.

Patients should seek surgical consultation early in the course of the disease. The overall results are very good following surgical treatment. A great many patients are completely rehabilitated, and symptoms of the disease only rarely recur.

Attend

the

AMA

CLINICAL SESSION

PHILADELPHIA

December 3-6, 1957

Congenital Glaucoma

HENRY H. GURAU, M.D.

DES MOINES

Until 1934, when Barkan introduced goniotomy as the operation of choice for congenital glaucoma, the prognosis for this disease was very poor indeed. Medical treatment had never been successful, and trephine, iridencleisis and cyclodialysis were of little avail in the great majority of cases.

During the last 15 years, a great deal of work has been done to discover the true nature of congenital glaucoma and to find an effective treatment. Two years ago, Dr. Braley and his group introduced a new concept of its etiology. For many years the most widely accepted theory was that the angle of the anterior chamber was filled by a persistent embryonic mesoderm which prevented the aqueous from reaching the trabeculum and the canal of Schlemm. But Drs. Braley and Burian demonstrated on microscopic examination of fetal eyes that the chamber angle is formed by a cleavage between the cornea and the iris. This cleavage is brought about by internal stresses—i.e., by a difference in growth of different parts of the ciliary body and the outer coats of the eye. In congenital glaucoma this cleavage is incomplete, obstructing the aqueous outflow. Besides this mechanical blocking, there probably are also some anomalies of Schlemm's canal in certain cases.

Congenital glaucoma does not always manifest itself at birth or in early infancy. Anderson has compiled the following statistics: Present at birth, 40 per cent; Before six months, 34 per cent; Before one year, 12 per cent; Before six years, 11 per cent; and After six years, 2 per cent. It seems, therefore, that in three out of four cases the diagnosis is evident before the age of six months. There seems to be a relationship between the time of onset and the severity of the disease. When it is present in early infancy, the prognosis is not so good as in cases of delayed onset.

When glaucoma is found in older children or in young adults, it is customarily called "juvenile glaucoma." In a paper given before the International Congress of Ophthalmology in New York in 1954, François came to the conclusion that there is no such entity. Such cases, he said, are to be classed either as congenital glaucoma of delayed onset or as the adult form of angle block or chronic simple glaucoma of premature onset. François feels that he can make a definite distinction between those entities by means of a gonioscopic examination.

In an advanced case the diagnosis is hard to miss, but in an early one, recognition is sometimes difficult. The symptoms most commonly found are photophobia, blepharospasm and epiphora. They are also valuable in determining the effect of treatment, for they subside when the tension has been reduced to normal levels.

The most common signs that cause parents to take their child to a physician are cloudiness of the cornea and enlargement of the globe. If the glaucoma is present before the age of three years, the globe will enlarge. After that age, the cornea and sclera are less elastic and do not stretch readily.

The cloudiness is at first limited to the epithelium, and later affects the stroma as a result of an alteration in fluid metabolism. These changes are reversible. Later cicatricial scarring of the parenchyma leaves a corneal opacity, even after a successful lowering of tension.

These eyes always have a deep anterior chamber —a characteristic referred to in the now seldom-used term "hydrophthalmia." Tears in Descemet's membrane are a frequent finding. They are usually horizontal and below the center of the cornea at first, but they can be found centrally or above the center. At times, Descemet's membrane separates from the corneal stroma between two tears and forms a band across the anterior chamber.

The intraocular tension should be the most valuable finding in the diagnosis of congenital glaucoma, but for several reasons it is not entirely reliable. When measuring the tension, one should have the child under deep anesthesia, for too high a reading may be obtained in a struggling and squinting child. Scheie recommends deep anesthesia with intubation. On the other hand, the preoperative dehydration can cause too low a reading. The larger radius or curvature of the enlarged cornea and the lowered rigidity in a distended eyeball will also have to be taken into account. When there is any uncertainty about the true intraocular tension, it is considered wise to delay surgery until a recheck of the tension has been done and until the operator has satisfied himself that intervention is really necessary.

Gonioscopy is not easily done in an infant, and although some authorities feel that they can make a definite diagnosis on the appearance of the angle of the anterior chamber, others—notably Harold Scheie—feel that much more work needs to be done on the subject before the method becomes dependable in diagnosis.

The most striking feature is the great depth of the anterior chamber and the absence of the angle recess. The angle is filled in by the anterior leaf of the iris, which has its insertion in the trabecular area, giving the whole angle a rounded appearance.

However, not all eyes show these findings, and some in which an anterior insertion of the iris is found show no evidence of glaucoma. When examining a large series of small children with the gonioscope, Barkan made the observation that Schlemm's canal usually fills with blood upon application of the contact glass. If it has not filled with blood spontaneously after application of the glass, it can be made to do so if one exerts digital pressure on the jugular veins.

In the eyes of children affected by congenital glaucoma, the band representing the blood-filled canal of Schlemm is faint and veiled by overlying tissue. In many cases, no blood-filling can be observed at all.

I have never been very successful in examining the angle of the anterior chamber in babies, but I had occasion to see the angle in a few children who were brought to me because their parents had noticed their "large eyes." One was W. L., age 10, whose grandmother has chronic simple glaucoma. The child never had had any apparent eye trouble, but had always had large eyes. On examination, the corneae measured 12 mm., and the anterior chambers were deep. There was atrophy of the iris, and the pupils were slightly irregular in shape and eccentric, with normal reactions. Gonioscopic examination showed complete anterior insertion of the iris, and showed that the iris reached as far forward as Schwalbe's line in a few places. There were no opacities in the cornea, and the intraocular tension was 19. The visual acuity was 20/20. I am trying to do some follow-up examinations on these eyes, and it should be very interesting to see whether or not they will eventually develop an increased pressure.

PROGNOSIS

Unless the tension can be controlled, there is a slow progression of the disease. The cornea continues to increase in size and becomes more and more cloudy. In some cases it assumes a porcelain-white appearance. Many cases seem to stabilize at the age of 12 to 14 years, possibly because of atrophy of the ciliary body and cessation of aqueous formation, but degenerative changes continue. The thinning of the sclera may be so extreme that rupture of the globe occurs spontaneously or from minor trauma. Slight injuries may also lead to anterior-chamber hemorrhage or dislocation of the lens. The eyes are also predisposed to retinal detachment.

Only rarely does the disease come to a standstill and leave the individual with useful vision. I should like to report such a case. The patient came to me at the age of 50 because of failing vision in the right eye. He had an advanced cataract in the right eye, with vision of 20/400, and incipient cataract of the left eye, with vision of 20/30. The corneae were large, measuring 14 mm. in diameter. The findings on the two eyes were identical. There was a thin opacity in the superficial stroma of the cornea centrally and a horizontal tear in Descemet's membrane below the center. The anterior chambers were very deep, and the irides showed marked atrophy and were tremulous.

Gonioscopically, there was no angle recess, and the ciliary band was not visible. The angle appeared round because of the complete anterior insertion of the iris. The right fundus could not be seen, but the left one showed no atrophy of the optic nerve. The intraocular tension was R.37-L.30. Under treatment with pilocarpine, the tension came down to 24 bilaterally, and on February 12, 1954, intracapsular extraction with broad glaucoma iridectomy was done on the right eye, with subsequent vision of 20/30. By November, 1954, the visual acuity of the left eye had dropped to 20/200, and the same procedure was done on it, with ultimate vision of 20/20.

The aphakic refraction was: Right Eye +7.50s +2.75c x15; Left Eye +8.25s +1.75c x170. Following surgery, the tension remained within normal limits without further use of miotics.

DIFFERENTIAL DIAGNOSIS

In the differential diagnosis, the most important condition to consider is megalocornea. The points of difference between the two conditions, as listed by Duke-Elder, are shown in Table 1.

TABLE 1

Megalocornea	*Congenital Glaucoma*
1. Normal tension	1. Elevated tension
2. No corneal opacities	2. Corneal opacities and ruptures in Descemet's membrane
3. No gross malformation of chamber angle	3. Gross abnormalities of chamber angle
4. No cupped disk	4. Frequent cupped disk
5. Bilateral symmetry almost invariably	5. Unilateral in 35 per cent of cases
6. Almost entirely restricted to males	6. Ratio of males to females 5:3
7. Little or no functional defect	7. Much functional defect
8. Result of primary overgrowth	8. Result of secondary distension

Gonioscopic examination in megalocornea shows a wide angle, with broad ciliary band and broad trabeculum. Frequently the line of Schwalbe is unusually prominent.

High myopia may be confused with congenital glaucoma. In myopia there is an axial elongation of the eyeball. The corneal diameter is usually normal, and the cornea shows no cloudiness.

The anterior chamber may be deeper than normal, but there is no anomaly of the angle. Ophthalmoscopy or retinoscopy will show the presence of myopia, and the fundus may show myopic changes. It is, however, not too uncommon to find glaucoma in a highly nearsighted eye.

A condition called congenital idiopathic edema of the cornea may present some difficulty in the differential diagnosis. Such eyes present diffuse epithelial edema and photophobia, but the corneal

diameter is not enlarged, and there are no tears in Descemet's membrane. The intraocular tension is normal.

Reese described a condition which he called congenitally opaque cornea. There is a bilateral, dense, round, central corneal opacity. The tonometer shows an elevated tension, but the eyes seem perfectly soft to palpation. There is no enlargement of the cornea. The condition is thought to be the result of intrauterine corneal ulceration.

TREATMENT

Medical treatment with miotics has never been successful in bringing the tension down to normal and halting the progress of the disease.

Lately, Diamox has been used in some cases and has seemed to be effective in reducing the tension. The idea has been advanced that Diamox may temporarily stop the production of aqueous, and by so doing may give the eyes a chance to develop a normal angle and later be able to handle the outflow of aqueous efficiently. This is a highly theoretical consideration, and it might be questioned whether the aqueous pressure is not one of the factors which helps bring about the cleavage in the angle of the anterior chamber and proper functioning of the trabeculum. Muller advanced the idea that collapse of Schlemm's canal occurs because of functional inactivity when the aqueous is denied access to it. If this theory is correct, then diminishing the formation of aqueous through the administration of Diamox would be definitely harmful to the eye. Besides, a prolonged suppression of aqueous may have a disturbing influence on the development of the lens.

Surgery is always indicated, and it is not considered wise to delay it for a trial of conservative treatment.

Early surgery offers the best hope for arresting the disease, for the longer the condition is allowed to persist, the more changes take place in the eye and the smaller are the chances of an ultimate cure. In early cases, the canal of Schlemm may be open, and all that needs be done is to allow the aqueous to have access to it. As stretching of the globe continues, the canal of Schlemm becomes closed, and goniotomy will no longer be successful.

The operations usually performed for the relief of glaucoma in the adult are seldom successful in congenital glaucoma. Trephine and iridencleisis are usually undertaken only as a final, desperate resort after other operations have been unsuccessful. Cyclodialysis and cyclodiathermy have a few advocates, but they are not generally considered the operations of choice. Recently, Preziosi has reported a bilateral case of congenital glaucoma which was cured by his technic of galvanocautery puncture. No definite opinion can be formed on the efficacy of this operation until a number of cases have been reported and until they have been followed for a considerable period of time.

The two operations which have been most reliable in the hands of the majority of ophthalmologists are goniotomy and goniopuncture.

In 1892, DeVincentiis introduced the incision of the angle of the anterior chamber for the relief of glaucoma, but his technic never became very popular. In 1934, Barkan improved the method of DeVincentiis by operating under a gonioscopic contact lens with direct visualization. As he published more and more reports of successful operations, other surgeons began using his modification of the procedure, and at the present time it is the most widely used operation for congenital glaucoma.

Barkan himself is very dogmatic about the use of the contact glass and direct visualization of the angle in surgery. He even recommends scraping off the corneal epithelium when it is hazy, so that one may be able to see the chamber angle. But most surgeons, notably Harold Scheie, feel that working under a contact lens is too cumbersome. They maintain that with practice and good knowledge of the anatomy of the angle, one can more easily perform the operation without the contact lens.

Maximal constriction of the pupil is obtained through the instillation of 5 per cent Prostigmin or 1 per cent eserine before surgery.

After anesthesia has been obtained, two silk sutures are introduced at the limbus at 12 and 6 o'clock to serve as fixation of the globe. This is easier than having an assistant hold the eye with two fixation forceps, especially in private practice, where a highly trained assistant is not always available. The puncture with the goniotomy knife is made in the right eye at 10 o'clock and in the left eye at 2 o'clock, 1 mm. inside the limbus and slightly oblique to prevent the escape of aqueous. The knife is carried across the anterior chamber toward 5 o'clock in the right eye, and toward 7 o'clock in the left one until the point of the blade disappears in the angle recess. The handle of the knife is then lowered, thereby incising the trabeculum for about one third of its circumference. The knife is then carefully withdrawn from the eye. Usually, a small amount of aqueous is lost as the knife is withdrawn. If much aqueous escapes, it must be replaced with air or saline.

A slight variation of the technic has been introduced by Dr. E. M. Robertson, of Oklahoma City. After the point of the blade has entered the angle recess, the knife is rotated 90° so that the blade is now directed forward. In this position, the blade fits the angle nicely, and there is less danger of cutting too deeply into the sclera.

In 1950, Harold Scheie introduced a new operation for congenital glaucoma which he had discovered by accident. In doing a goniotomy he had inadvertently punctured the sclera and found that he had created a permanent fistula. He then used this procedure intentionally and found it effective in a high percentage of cases.

Preparation and fixation of the eye are the

same as in goniotomy, and the conjunctiva in the lower nasal quadrant is ballooned out by injecting saline close to the limbus. The knife is introduced at 9 o'clock in the right eye and at 3 o'clock in the left eye, and is carried across the anterior chamber in an oblique, downward direction. It is introduced into the angle recess just anterior to the plane of the iris, and is pushed through the sclera until the cutting end of the knife is entirely visible under the previously ballooned conjunctiva. Then it is withdrawn from the eye.

Scheie insists that no attempt should be made to enlarge the puncture either horizontally or vertically by rotating the blade of the knife forward 90° before withdrawing it. In his opinion, a small puncture is more effective because more aqueous is forced through it, helping to produce a permanent fistula. There is also less danger of iris incarceration when the opening is kept small.

If the aqueous is lost, it is replaced by air, which Scheie likes to introduce through a knife needle puncture made at the beginning of the operation.

In the early stage of the disease, goniotomy is considered to be the operation of choice because all that needs be done is to allow the aqueous access to the trabeculum.

As the disease progresses, stretching the globe causes obliteration of Schlemm's canal, and goniopuncture will have to be done to afford external filtration. Goniopuncture is also considered the operation of choice in juvenile glaucoma.

In recent years, a number of ophthalmologists have combined the two operations, doing the goniotomy first and then pushing the knife through the sclera to produce a goniopuncture.

SUMMARY

The symptoms of congenital glaucoma are photophobia, blepharospasm and epiphora. The earliest signs are enlargement and cloudiness of the cornea.

Whenever any of these symptoms or signs are found in a child under one year old, congenital glaucoma should be strongly suspected, and every effort should be made either to establish the diagnosis or to rule it out.

Medical treatment is of no value, and no time should be lost in trying it.

Goniotomy and goniopuncture, alone or combined, are the operations of choice, and they should be done repeatedly before any of the more extensive operations is resorted to.

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AMA Clinical Session at Philadelphia

The American Medical Association's Eleventh Clinical Session, set for December 3-6 at Convention Hall, Philadelphia, will be aimed at helping the general practitioner "catch up" on the latest medical advances.

Approximately 4,000 physicians are expected to attend. There will be lecture meetings, symposia and panel discussions on such subjects as cardiovascular disease, cancer, emotional problems of menopause, hypertension, diabetes, arthritis and injuries. A special feature of the meeting will be a trans-Atlantic conference between physicians in Philadelphia and London, on advances in chemotherapy for cancer.

Closed-circuit television clinics will emanate from Lankenau Hospital, and a medical motion picture program is also being prepared. There are to be 120 scientific exhibits and 160 technical exhibits.

Headquarters will be the Bellevue-Stratford Hotel, and it is there that the House of Delegates, the trustees and various ones of the AMA councils and committees will meet.

Two committees of the AMA Council on Medical Service plan regional meetings on Monday, December 2, in Philadelphia just prior to the Clinical Session. (1) The Committee on Maternal and Child Care will hold its first regional meeting on perinatal mortality and morbidity. Invitations are being sent to doctors in eastern states, but those from other parts of the country are welcome to attend. (2) The Committee on Aging will hold its third regional conference for members of state committees on aging. Subjects to be discussed include physical examinations and a health-maintenance programs, guides for the organization and operation of medical society committees on aging, medical education in caring for the aged, pre-retirement counseling, and special research programs for medical schools. Further information on these pre-convention conferences can be secured from the AMA Council on Medical Service, 535 North Dearborn Street, Chicago 10.

Q Fever in Animals

R. A. TJALMA, D.V.M.

IOWA CITY

ACCORDING TO THE World Health Organization, the term *zoonoses* designates those diseases naturally transmitted between vertebrate animals and man.[1] Many of the zoonoses warrant consideration both as animal diseases of economic significance and as threats to the public health. Others of them, because of their very nature, are not subject to evaluation as animal diseases of economic importance and therefore can be evaluated only on a public-health basis. Needless to say, experience has proved the latter class of zoonoses considerably more difficult to control. One of the best examples of an animal disease which, although transmissable to man, is devoid of any recognized economic significance is Q fever.

DISCOVERY

Q fever is a rickettsial disease of man and certain wild and domestic animals that was first reported in 1937 by Derrick in Australia.[2] In the course of investigating an outbreak of fever of undetermined origin among meat plant workers, he recognized a new clinical entity, succeeded in isolating the etiologic agent, named it Rickettsia burneti and called the resultant malady Q fever. The "Q" in the term "Q fever" comes not from "Queensland," the name of the Australian province where the original outbreak occurred, but rather from the word "query," meaning question or unknown.

In 1938, Davis and Cox isolated a filterable agent from ticks collected in the vicinity of Nine-Mile Creek, in Montana.[3] This organism was identified as a Rickettsia on the basis of its morphology and staining reactions, as well as its characteristic inability to grow in the absence of living cells. A chance human infection, as the result of a laboratory accident, touched off a sequence of events which led to the recognition of the American organism as identical with Derrick's Rickettsia burneti.

Subsequent studies demonstrated Rickettsia burneti to be unique as compared with the type organism—Rickettsia prowazeki. The new agent has been found to be filterable, considerably more resistant to physical and chemical agents, and incapable of producing agglutinins to the Proteus organisms. Furthermore, human cases seldom exhibit the skin rash typical of other rickettsial diseases. Following the discovery of these criteria, the name of the organism was changed to Coxiella burneti.[4] From the epidemiologic standpoint, perhaps the most important single characteristic of Coxiella burneti is its pronounced ability to remain viable after long periods of drying in dust.

PATHOGENESIS

The pathogenesis of Q fever in animals is not well understood. Indications are that infection in domestic animals occurs in an asymptomatic or subclinical form. On the other hand, there is a possibility that Q fever may contribute to the infertility-abortion problem as it exists among certain domestic animal species. There is no doubt that certain animal species are involved in a fundamental manner in the Q fever infection-transmission cycle. However, the present evidence would seem to indicate rather strongly the existence of more than one transmission mechanism.

Experimentally, the following animals have been found susceptible: field mouse, house mouse, porcupine, chipmunk, pine squirrel, flying squirrel, mountain rat, cottontail rabbit, sparrow, pigeon and parakeet.[5] Cats also have been experimentally infected.[6] The disease has been reported as occurring naturally in dogs that have been in contact with infected sheep.[7] Information from other countries indicates the possibility that swine may be a reservoir of the disease.[8]

In Australia the natural reservoir of the disease has been identified as the bandicoot, a common, rodent-like animal of the Australian bush. The complete cycle is thought to involve bandicoots, ticks and cattle, with man becoming infected incidentally, through contact with tick-infested cattle or their products.

The Q fever agent has been isloated from various species of ticks in this country. Ticks have been infected by feeding on experimentally infected cattle. The feces of infected ticks are highly infectious for guinea pigs via the cutaneous, conjunctival, nasal and oral routes. Infected tick feces were thought to play a major role in the epidemiology of the disease, but recent epidemiologic investigations have not supported this hypothesis. The role of the tick in the epizootiology of the disease remains undecided. Irrespective of the role played by the tick in transmitting the disease from animal to animal and from animal to man, recent developments clearly demonstrate the existence of other transmission mechanisms.

EPIDEMIOLOGY

Detailed epidemiologic studies have demonstrated repeatedly the relationship which usually exists

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between human infections and association with infected animals or their products. The animal species involved have invariably proved to be ruminants—cattle, sheep and goats. The first two outbreaks of human Q fever in this country occurred in meat packing plants.[9, 10] Investigation revealed the focus of infection to be of the common source, short-duration variety—the type of exposure one might expect in the processing of a single lot or shipment of infected animals.

Cattle infected with Q fever routinely shed the organisms in their milk. Exhaustive field studies, conducted in the Q fever endemic areas of California, have demonstrated that raw milk consumers as a group have a higher incidence of Q fever than those individuals who do not drink raw milk. However, consumption of raw milk was demonstrated to have occurred in only 32 per cent of the cases studied.[11] A history of occupational contact with livestock was found in 38 per cent of the patients, and 45 per cent lived in close proximity to dairies or stockyards.

STUDIES BEING MADE

The efficacy of pasteurization in destroying the organism of Q fever in milk has been studied.[12] Of the two types of pasteurization in use, the high temperature-short time method proved to be the more effective. Milk pasteurized by this process was rendered free of organisms as tested by guinea pig inoculation. The low-temperature or vat method of pasteurization was found to give variable results. Some milk samples pasteurized by this process were capable of inducing a specific antibody response when inoculated into guinea pigs. Vat pasteurization probably serves to reduce the concentration of organisms to a point below the human minimum infectious dose.

Infected cattle and sheep shed enormous numbers of organisms in vaginal discharges during and for a period following parturition. The possibility of an infected animal's creating an infectious aerosol during the act of parturition has been pointed out by several investigators. Air-sampling studies conducted on a dairy farm and a sheep ranch, both of which were known to have infected animals, resulted in the recovery of viable organisms.[13] Placental material from infected animals is a rich source of Rickettsia. It is not difficult to visualize how in the course of his daily chores, the farmer exposes himself to these infectious materials. All too frequently, placental material from such animals is disposed of in a manner seemingly designed to facilitate rapid drying and subsequent scattering.

On the basis of what is now known, Q fever in ruminants appears to be not unlike brucellosis in many respects. Young animals, even when raised in a contaminated environment, seem to be resistant to infection until they reach sexual maturity. In those species subject to natural infection, the disease is limited largely to female animals, and when once established in the animal, the disease seems to localize in the reproductive organs.

Q fever has not been reported as occurring in man or animals in Iowa. The one human case on record in this state was investigated and attributed to an exposure that had occurred in Texas some weeks prior to the illness. During the last six months, Q fever has been under study by the SUI Institute of Agricultural Medicine and Department of Internal Medicine. Although the project is not complete, a significant amount of Q fever has been demonstrated as occurring, in endemic form, in the dairy cattle population. The epizootiological characteristics of the disease, as it occurs in dairy cattle in this state, appear to vary from those reported in California. Further work has been outlined for the investigation of the possible effects of seasonal weather conditions on the epizootiology and epidemiology of the disease. Little time has been devoted to locating human cases of infection; however one such case has been identified.

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Q Fever in Man

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SINCE TO MOST Iowa physicians Q fever is probably an unfamiliar topic, rather than one which is causing them great concern, readers perhaps may wonder why space should be devoted to it in this JOURNAL. Its unfamiliarity is the very reason for presenting the topic. We at the S.U.I. Department of Medicine feel that Q fever is present and probably endemic in the State of Iowa, although human cases of it have not as yet been recognized.

CLINICAL FEATURES

I shall present the clinical features of this disease before going on to a discussion of its mode of transmission and epidemiology. Q fever[1, 2] is an acute infectious disease which is characterized by the sudden onset of severe headache, malaise, fever, chills and varying degrees of prostration. The average patient is confined to bed and is ill enough to require medical attention. The most characteristic feature of this disease is its abruptness of onset. A patient may feel quite well until the day of illness, when he notes only a slight malaise. With the onset of fever, he sometimes develops shaking chills and becomes acutely ill. He complains of a splitting headache in the frontal and retro-orbital areas. This is usually accompanied by a marked photophobia. With the onset, there oftentimes is marked pain in the lumbar area of the back and a varying degree of nuchal rigidity. Many patients complain of severe aching of the extremities. Gastrointestinal disturbances are common on the first day. These vary from a profound degree of anorexia to severe nausea and vomiting which may lead to dehydration. Upper-respiratory symptoms are most variable. In some patients they are completely absent, but other patients complain of sore throat, rhinitis, anterior chest pains, cough and pleurisy. Rarely, dyspnea and even hemoptysis may occur. The incubation period of this disease[3] is usually stated to be 12 to 30 days, but recent studies conducted by the United States Army have demonstrated that it varies inversely with the size of the initial exposure, and may be shorter or longer than those limits.[1] The fever begins abruptly and is generally undulating or remittent in character. It may rise to 103°F. or higher. It usually reaches its peak during late afternoon, subsides during the evening, at which time a night sweat may occur, and by morning may be near normal. The average duration of fever is from six to 10 days, but occasionally it may be longer. The anorexia may be so severe as to necessitate the administration of intravenous fluids and medications for the first day or two of treatment.

On physical examination,[4] the patient demonstrates moderate injection of the conjunctivae. There may be a diffuse blush of the face and the upper part of the chest, though occasionally a macular rash is seen about those areas. The rash or erythema subsides by the third day in most instances. The mucous membranes of the nose and pharynx are often injected and moderately inflamed. In a few instances, a stomatitis resembling Vincent's infection may be seen. There is frequently moderate nuchal rigidity, and there may be moderate enlargement of the lymph nodes in the neck and axillae. The chest usually reveals normal expansions, and is clear to percussion and auscultation, although a few rales and rhonchi may be discovered in rare instances. The abdomen often reveals a certain amount of guarding, which may be due to a combination of the nausea and gastrointestinal distress plus a certain amount of tenderness in the region of the spleen or the liver. Approximately one fourth of the patients develop a palpably enlarged spleen, and it is usually tender. The liver is less commonly enlarged and tender. The remainder of the examination is generally normal. Chest x-rays disclose[5] pulmonary infiltrates in more than half of the patients. These infiltrates have a predilection for the central areas of the lung fields, although almost any area may be involved. The infiltrates vary from a fine, soft, diffuse pattern, to large patches of consolidation which may resemble metastatic lesions. There is little tendency for consolidation of a single lobe, and there is seldom evidence of pleural effusion. The disparity between roentgen findings and physical diagnostic signs is probably explained by the fact that the pleural surfaces of the lungs are seldom involved.

The diagnosis rests upon suspecting this illness. In patients who develop a sudden onset of a febrile illness characterized by aching, photophobia and profound anorexia, the finding of a moderate nuchal rigidity and enlargement of the spleen should heighten suspicion. Finally, the presence of characteristic pulmonary infiltrates in the roentgen examination of the chest serves to establish a tentative diagnosis. The actual diagnosis can be established only by laboratories having certain facilities. The most desirable way of establishing a diagnosis is by guinea pig inoculation with samples of blood drawn from the patient during the acute stage of the illness. The organism grows readily in guinea pigs and produces an acute febrile illness within

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seven to 14 days. Blood taken from the guinea pigs during the convalescent phase shows a high titer of complement fixing antibodies against Coxiella burnetii. The alternate method of making a diagnosis is the demonstration of a rising titer of antibodies in samples of serum drawn serially from the patient during his convalescence. The antibodies can be determined by the complement fixation method perferably, or by an agglutination technic. In performing epidemiologic studies to detect the approximate incidence of Q fever in a population group, a skin test similar to the brucellin has been employed.[6] Obviously, this test is of no value in diagnosing the acute illness. It has the serious disadvantage of producing occasional severe local reactions, and it may produce painful regional lymphadenopathy.

Classical laboratory features of acute Q fever are as follows. In addition to the x-ray findings and the rise in the antibody titer, there are no specific features. The total leukocyte count varies within normal limits. Similarly, the differential count is not characteristic, although a slight lymphocytosis or monocytosis may develop. The erythrocyte sedimentation rate rises in proportion to the height and duration of the fever, but lags behind it by several days. Examination of the urine generally discloses normal findings, but a few patients develop transient proteinuria, and in a few instances microscopic or even gross hematuria. In a few cases hepatic involvement occurs, and there is a rise in the serum bilirubin level, accompanied by alterations in the other liver function tests. Usually all of these abnormalities disappear during the convalescent period of approximately 10 days.

Complications of Q fever are uncommon, but on occasion they may be quite serious. Among those that may occur are meningo-encephalitis, iritis, pleural effusion, severe hepatic involvement with frank jaundice, activation of the latent chronic nephritis, orchitis, arthritis and thrombophlebitis. The disease is seldom fatal, except in those instances where it has occurred in patients with preexisting pulmonary ailments such as bronchiectasis or pulmonary tuberculosis. In these few patients,[7] autopsy has revealed that the lung tissues contained consolidated areas infiltrated with mononuclear cells and degenerated macrophages. Many rickettsial organisms were seen in those areas.

TREATMENT

The treatment of Q fever with tetracyclines is highly effective. Though a strict comparison cannot be drawn between the three tetracyclines and chloramphenicol, it is well established that Terramycin in large doses (750 mg. every six hours) will result in a prompt subsidence of fever and clinical illness.[3] These drugs are only bacteriostatic, and if treatment is not continued for a sufficiently long period to time to allow antibody formation to occur, the disease will exacerbate after the withdrawal of therapy. Usually the antibody titer begins to rise between the tenth and fourteenth day of illness, and reaches its height sometime after the fourth week. The titer gradually falls during the succeeding 12 months, so that by the end of a year many patients demonstrate a low titer or none at all. Tigertt[3] and his group demonstrated that administration of Terramycin prophylactically 24 hours after respiratory exposure of volunteers to Coxiella burnetii resulted in a prolonged incubation period equal to the duration of therapy plus the normal incubation period. However, if therapy was delayed until late in the incubation period, no disease developed, although antibodies appeared in the serums of these subjects. Attempts by this same group to achieve an active immunization against Q fever have been fairly successful.

EPIDEMIOLOGY

Though Q fever unquestionably can be transmitted by means of insect vectors and by means of contaminated milk or other food products, these methods have given a poor yield of transmission experimentally.[8] Similarly, epidemiologic information indicates that these methods are not significant.[9] By far the most successful method of transmitting the disease experimentally has been by exposure to dust contaminated with the organism. A study of most human epidemics substantiates the impression that the disease is generally transmitted by airborne modalities. Clinically, the disease does not seem to be transmitted from person to person, and isolation of patients is unnecessary. In Iowa, one would expect to find Q fever in farmers who work with or in the vicinity of cattle, sheep and goats, and it would be most apt to occur in the spring following delivery of the young animals. It is also likely to occur in employees of meat packing and rendering plants, or in personnel who handle hides and skins. Finally, it is exceedingly likely to occur in any laboratory working with Coxiella burnetii. In almost every instance, some personnel or individuals having casual contacts with such a laboratory become infected. The disease is much more common in men than in women, and much more common in adults than in children.[10] Perhaps the explanation is to be found in the fact that men are more frequently exposed to animals and their dust.

SUMMARY

Q fever is a disease of animals which can readily be transmitted to man. It most commonly affects people who work with cattle, sheep and goats, and it usually occurs in the springtime, subsequent to parturition of these animals.

The usual mode of transmission is thought to be by airborne particulate material derived from animal sources.

The disease is characterized by the onset of an acute, febrile illness, with generalized aching and marked malaise. X-rays may demonstrate pulmo-

nary infiltrates. The diagnosis rests upon the demonstration of a rising antibody titer, or on the recovery of the organism. It is not contagious from one person to another, and is satisfactorily treated by means of large doses of the tetracycline drugs.

The mortality rate is very low, and complications are seldom seen.

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State University of Iowa College of Medicine

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 39-YEAR-OLD WHITE rock-quarry worker was admitted to the Orthopedic Department at University Hospitals in November, 1937, with pain and swelling of the left wrist. A year and a half earlier, he had been lifting a heavy rock when it slipped out of his grasp and skinned the volar surface of his left wrist. There was no bleeding. Since that time, the man had experienced some weakness in his left hand, with pain and slight swelling in the wrist. Four months before admission, these symptoms had increased, and a swollen area the size of a small walnut had appeared on the volar surface of the wrist. His physician drained it and obtained about ½ oz. of odorless, yellowish, thick material. A draining sinus remained, with slight swelling in the palm of the hand. The patient did not have chills, fever, cough or hemoptysis. He had been married since 1918, and had three children. There was no history of tuberculosis in his family.

Examination revealed a well developed and nourished white male. The right upper chest was smaller than the left, and the expansion was diminished. The breath sounds were somewhat suppressed, but there were no rales. The blood pressure was 132/80 mm. Hg. The remainder of the physical examination was negative, except for a swollen, reddened area about the size of a silver dollar in the middle of the volar aspect of the left wrist, with a small draining sinus. There was no tenderness or swelling in the palm, but a slight limitation of wrist motion could be detected. Roentgenograms of the left hand showed bone atrophy. Agglutination tests for undulant, typhoid and paratyphoid fevers were negative. Serology tests and a urinalysis were negative. A tuberculin test, 1:1000 bovine, was interpreted as 4+ at 24 hours; a human tuberculin was 1+ at 24 hours.

The tendon sheaths of the deep and superficial flexors of the fingers and the radial bursa were surgically removed on the left, and guinea pig inoculation with the material removed at surgery was positive for tuberculosis. The wound healed after four months of slight drainage, and the patient completely recovered the use of his hand. At that time, he went to work on a farm.

The patient returned to the Orthopedic Department 18 years later, on August 2, 1956, complaining of pain in the left shoulder and right wrist. His health had been excellent until three weeks before this admission, when he stepped into a hole on his farm and jarred his left shoulder. This shoulder had been painful thereafter. One week later, swelling and pain appeared in the right wrist, accompanied by some fever. After another week—one week prior to admission—he had a shaking chill which lasted 30 minutes, and daily temperature elevations to 100° F. persisted.

On examination, the pulse rate was 80 per minute, respirations were 16 per minute, temperature was 98.6° F. and blood pressure was 125/75 mm. Hg. The patient was in no acute pain or distress. There was some decrease in expansion, and there was dullness over the right middle lobe of the lung posteriorly. There was a decrease in breath sounds on the right, but no rales were heard. The heart was of normal size. No murmurs or thrills could be heard. There was tenderness at the medial upper angle of the left scapula, and the right wrist was swollen, tender and painful on motion, with a slight increase of local temperature. Hemoglobin was 12.1 Gm./100 ml.; red blood count was 3,900,000 per cu. mm.; white blood count was 8,900 per cu. mm.; the differential showed 1 per cent band polymorphonuclears, 72 per cent segmental polymorphonuclears, 1 per cent basophils, 25 per cent lymphocytes, and 1 per cent monocytes; the sedimentation rate was 115 mm. per hour; and the hematocrit was 33.5 per cent. Blood urea nitrogen

was 16 mg./100; creatinine was 1.2 mg./100; serum protein was 6.0 Gm./100; albumin was 4.1; and globulin was 2.0. Agglutination tests for brucellosis and typhoid fever were negative. A second strength tuberculin was strongly positive. Roentgenograms of the left shoulder and right wrist were interpreted as negative. There was pronounced calcification of the radial and ulnar arteries of the right wrist. Roentgenograms of the chest showed a calcified pleura on the right. The heart and great vessels were normal.

The patient was given streptomycin, 0.5 Gm. b.i.d.; PAS, 3 Gm. q.i.d.; and Isoniazid, 50 mg. q.i.d. During the first five days in the hospital his temperature reached only 100° F., but afterward spiked to 103 and 104° F. some afternoons. On August 9, a harsh, high-pitched, grade 3 systolic murmur was first detected, and could be heard best at the apex. The left border of the heart was 1 cm. to the left of the midclavicular line. The liver and spleen were not palpable. There was no edema in the lower extremities. Cultures and guinea pig inoculations with sputum and gastric lavages were negative for tuberculosis. An electrocardiogram on August 10 was read as normal. Blood and urine cultures were repeatedly negative. Intravenous urograms showed prompt excretion and good concentration bilaterally. A large, non-tender lymph node developed in the right axilla. The streptomycin was discontinued on August 10.

The patient's condition worsened. The body temperature spiked to 104.5° F. on August 14. Progress chest films did not reveal any parenchymal disease, although it was stated that an area of pneumonitis may have been obscured by the pleural calcification on the right. Occasionally there were brief episodes of shortness of breath. On August 17, the patient developed severe shortness of breath, pallor of the skin, and cyanosis of the lips and nails. The patient had no chest pain, but was very restless. The blood pressure was 90/36 mm. Hg., the pulse 68 per minute, the heart regular, and the respiration rate 42 per minute, but there was no forced breathing. The lungs were negative to percussion and auscultation. The heart was not very active, and the sounds were distant. There were no thrills, and no definite murmur could be heard, although the patient was moaning, and the examination was considered inadequate. The abdomen was firm and non-tender. Morphine, 10 mg. hypodermically, and aminophylline, 500 mg. intramuscularly, were given. Oxygen by nasal tube was started. An electrocardiogram was ordered, but the patient expired one hour later.

CLINICAL DISCUSSION

Dr. Ignacio V. Ponseti, Orthopedic Surgery: The case to be presented today is that of a white man, a rock-quarry worker, who was treated in the Orthopedic Department in 1937 for tuberculous tenosynovitis of the left wrist. The involved tendon sheaths were surgically removed. The patient recovered from this operation in a few months and was able to return to work. Nineteen years later he returned to the Orthopedic Department complaining of pain and swelling in the right wrist and in the left shoulder. We thought that these symptoms were related to an exacerbation of the old tuberculous process. However, a few days after his admission to the hospital he started to have very high fever, and a consultation with members of the staff in internal medicine was requested.

Dr. Elmer L. DeGowin, Internal Medicine: First, I want to point out that all of us who have read the protocol have facts at our disposal that the clinician did not have when he saw the patient. In considering the differential diagnosis in retrospect, we include only the fatal diseases, but when he first saw this patient, the clinician did not know that death would result.

I have one fact which was not included in the protocol. Dr. Ponseti has told me that this patient's hospital illness was not due to tuberculosis. Tuberculous tendonitis was said to have been proved on his first admission to the hospital. The patient fell into a hole on his farm on July 21 and immediately got a pain in his left shoulder. We shall assume that it was due to trauma. Then there was a period of five days or so during which we are told only that he had a pain in his left shoulder. But on the 26th he had a chill and some fever. I have arbitrarily chosen to regard his illness as having begun on that day. Two days later he is said to have had a temperature of about 100° F. before he was observed in the hospital, and on the third day of his illness he had pain and swelling of the right wrist. Later, the x-ray films of the bones were negative. I'm a little disappointed not to find a more precise anatomic description of the swelling of the joints.

He was admitted to the hospital, then, on the eighth day, with signs of inflammation, and his temperature rose on each of the next four or five days to approximately 100° F. On the thirteenth day his temperature went up higher, and on the fifteenth day he developed a systolic murmur in his heart. He must have developed more symptoms, for further examinations of his heart were thought warranted. A tender lymph node was discovered in the right axilla at that time. The right wrist, I take it, was still swollen. His heart was somewhat enlarged to percussion, as compared with the finding on admission. This is confirmed by a glance at the x-ray films that were taken. On the sixteenth day, an electrocardiogram was reported as normal.

This man got worse from the thirteenth day to the fifteenth day, and his temperature was going up. From the sixteenth to the twenty-fifth day, his maximum temperatures were 104° F., and then a sudden catastrophe occurred in which he became

very dyspneic, pale and cyanotic. His blood pressure fell to 90/36 mm. Hg., and he died.

This appears to be the story of an acute infectious disease of 23 days' duration in a man 57 years of age. We have to consider the causes of an inflamed wrist, fever and a process in the heart causing dilatation and producing a murmur that was not there before, finally resulting in death.

I have chosen to discuss five or six hypotheses. First, let us consider the possibility of *acute bacterial endocarditis.* This disorder is usually secondary to some other infectious disease in which organisms lodge on the endocardium and produce vegetations. In a few days, the process can completely erode the cusp of a heart valve. The murmur in this patient could have occurred at the time that a valve leaflet was split or perforated, and the dilatation of the heart could have resulted from the insufficiency of the valve. If the regurgitation were considerable, death from cardiac failure would ensue. The fever, of course, could be explained on the basis of infection. The swollen right wrist might have served as the original focus of infection, particularly if it had been caused by a pyogenic organism. The hypothesis would not satisfactorily explain the lack of organisms in the blood cultures, however. In the the patients that I have seen with this condition, there has been no difficulty in isolating organisms from the blood. Furthermore, many types of pyogenic organisms should have been destroyed by the streptomycin that was given from the eighth to the fifteenth day.

Next, we might consider the possibility of *subacute bacterial endocarditis.* This, of course, may start out with a chill. The organisms may enter through some traumatic lesion in the skin. The course is usually more prolonged than in the present case. The organisms should be present in the blood cultures, but as you have had occasion to note, it sometimes takes many blood cultures to grow Streptococcus viridans and many other causative agents.

Another possibility—one that is also hard to prove or disprove during life—is *disseminated lupus erythematosus.* In about 30 per cent of patients with this disease, vegetations develop on the cardiac valves and occasionally break off, causing major difficulty. No skin lesions were mentioned in the patient whom we are discussing this afternoon. The man did not have hypertension, a rather frequent occurrence in this disease. Involvement of the kidneys is frequent. Parenthetically, I should like to point out that much expensive laboratory work is reported in the protocol, but there is no mention of what an old-fashioned urinalysis showed. I should like to know. Were red cells or albumin present in the urine?

Dr. Ponseti: No, I don't believe so.

Dr. DeGowin: One doesn't expect disseminated lupus to progress so fast as this man's disease did. It is an insidious disease and lasts a long time. As in other collagen diseases, there is an involvement of the joints, and we note that this patient had a swelling of the right wrist.

Another hypothesis is that this patient started out with *a cellulitis in the right wrist, and then* developed *a thrombophlebitis* in the arm which furnished an embolus to the lung. Thrombophlebitis might account for the fever up to the twelfth day of this disease. With pulmonary embolism, the intraventricular pressure would increase, and the heart would dilate and produce a systolic murmur. The infarct would continue to increase in size and finally would result in pulmonary insufficiency. I think that is a distinct possibility. We can speculate on the organisms that could cause such a sequence. Streptococci and Staphylococci could possibly be excluded, but the streptomycin may have destroyed the organisms and the thrombus may have produced mechanical difficulties. Fever does occur with pulmonary infarction.

Brucellosis should be considered. Joints are frequently involved, and rarely the organisms produce an endocarditis. We have had two or three patients here with a vegetative endocarditis due to Brucella organisms. When it occurs, the process is very corrosive. Dr. Carter, Dr. Borts and I once reported a patient with Brucella endocarditis who died from rupture of a mycotic aneurysm of the femoral artery.

We ought to think of such possibilities as *tularemia,* although in such cases there is usually an ulcer at the point of entrance of the organism. The painful lymph node in the right axilla would go with it. There was no report on agglutinins for Brucella or tularemia. As you may know, the agglutinins for tularemia usually stimulate the development of antibodies for Brucella also. Our patient's course was rather short for either brucellosis or tularemia.

Twenty-five years ago we would have considered *typhoid fever* first, but it is now quite a rare disease. The pattern of some 23 days of fever, starting out with a low fever the first week or so, a slightly higher one the second week, and a maximally severe one in three or four weeks constituted a sequence that was taught to all students as typical. Involvement of the heart or lungs was not common in typhoid fever.

Another possibility occurs to me. *Pericarditis,* with some effusion, produces an apparent enlargement of the heart, and a friction rub could have been mistaken for a murmur. This condition could have been secondary to an infectious process in the right wrist, or it might have been a complication of collagen vascular disease.

Those are the hypotheses that I have to offer. If I were forced to chose one of them, I should pick cellulitis in the right wrist, thrombophlebitis and a pulmonary embolism.

I should like to find out whether Dr. Gillies found x-ray evidence that supports or demolishes any of those diagnoses.

Dr. Carl L. Gillies, Radiology: A film taken on August 6 demonstrated calcification of the pleura on the right side, with some residual pleural thickening. We felt that this had no present significance, but represented an old, undrained empyema. There was some retraction of the thorax on that side, and although it could produce physical findings, it would not produce symptoms at that time.

As Dr. DeGowin has said, the examinations of the shoulder and wrist were negative.

A film taken a week later showed an increase in the size of the heart. The lung fields had not changed. Since the Danzer ratio at the first examination was .42 and at the second .51, there was a definite increase in the size of the cardiac shadow over a period of one week.

Dr. Ponseti: The right wrist was slightly swollen and tender. The extreme degrees of flexion and extension were painful, but there was no restriction of motion. A slight local elevation of temperature was recorded over the dorsum of the wrist, but there was no redness and there were no signs of inflammation of the arm. The left shoulder was tender at the site of the acromion, but no swelling was detected. According to the patient, the left shoulder had been more painful a few days prior to admission.

I apologize for having inadvertently given a hint to Dr. DeGowin that the patient's symptoms were not related to the old tuberculosis. However, I should like to ask him to consider tuberculosis in his differential diagnosis. Wouldn't it have been a distinct possibility in view of the past history?

Dr. DeGowin: Well, I should think that if the man had been in good health for 18 years after a tuberculous tendonitis had healed, he would be fairly unlikely to have a very acute tuberculosis without any more to show for it in the lungs.

Dr. Lewis E. January, Internal Medicine: Dr. Ponseti, when were all of these blood cultures drawn in relation to the streptomycin treatment? Were they taken during the time the patient was receiving streptomycin? That was stopped on August 9, wasn't it?

Dr. Ponseti: The streptomycin was withdrawn on August 9 for the purpose of obtaining the blood cultures without any antibiotic interference.

Dr. Raymond F. Sheets, Internal Medicine: What was the working diagnosis, Dr. Ponseti?

Dr. Ponseti: Before the medical resident came, we had heard a very loud heart murmur and knew that there was something wrong with the heart. The impression of the medical resident was extrapulmonary tuberculosis, with involvement of the right wrist and arteriosclerotic heart disease.

Dr. Sheets: Did he change his diagnosis?

Dr. Ponseti: There is no record about it, but I don't believe so.

Dr. George R. Zimmerman, Pathology: The principal necropsy finding was acute bacterial endocarditis with rupture of the anterior cusp of the aortic valve (Figure 1). An abscess extended from the base of the cusp, through the valve ring and into the base of the near tricuspid valve leaflet. The heart was dilated, and the ventricular myocardium mildly hypertrophied.



Figure 1

The original postmortem cultures of the vegetations yielded only Proteus vulgaris. It was considered very unlikely that Proteus vulgaris could have been the causative organism in such an acute infection, and therefore gram stains were done on the heart lesions. Some gram-positive rods were found, in addition to the masses of gram-negative Proteus vulgaris. In many instances the gram-positive organisms appeared beaded, and some seemed to branch. Portions of the vegetation were preserved in the deep freeze, and by special technics about which he will tell you, Dr. McKee isolated a rod-shaped organism which did not branch in the culture. More importantly, he also isolated alpha hemolytic Streptococci.

In the reported series of acute bacterial endocarditis, alpha hemolytic Streptococci have been implicated in about 60 per cent of cases. Thus, although no serum had been preserved to test against the alpha hemolytic Streptococcus, it seemed reasonable to assume that it was in fact the offending organism. The source of the initial bacteremia was not established. The wrist was not dissected.

It is somewhat extraordinary that there was no demonstrable previous valvular damage. Bacterial endocarditis—particularly the subacute form—is commonly superimposed upon a previous valvular

injury, and most frequently the earlier injury is rheumatic. Bacterial infection of the tricuspid valve is also unusual. When it is primary, though in this instance it seems *not* to have been, it often is found in morphine addicts who have injected the drug intravenously.

The man had some calcified pleural adhesions, anterolaterally on the right, from the fourth to the seventh rib. These were healed and, as Dr. Gillies has suggested, probably were the result of a healed empyema. He also had mild pulmonary interstitial fibrosis. There was focal thickening of the alveolar walls, and some fibrosis around blood vessels and subpleural lymphatics. Most of the fibrosis was associated with anthracosis, but anthracosis does not produce fibrosis. When the microscopic sections were examined by polarized light, the cause of the fibrosis became readily apparent. Admixed with the anthracosis pigment were numbers of refractile crystals whose size and shape were those of silica. You will recall that the patient was a rock-quarry worker when he was first admitted to this hospital 18 years ago.

Finally, the myeloid elements of the bone marrow were hyperplastic. This phenomenon, of course, was a response to infection. Death was attributed to cardiac failure from aortic valve incompetence and to infection.

Dr. DeGowin: I'd like to ask Dr. January why this degree of myocarditis didn't show up on the electrocardiogram.

Dr. January: The electrocardiogram was made on August 10, I believe. Another was ordered, apparently, on the day of the patient's death, but the technicians didn't get there with the machine to make one. I don't know what happened.

Dr. Zimmerman: This was a localized abscess. In the sections from the rest of the heart, the myocardium was not significantly abnormal.

Dr. January: Dr. Sheets, in answer to your question I can say that later on in the course of this patient's illness, the medical resident did suggest the possibility of subacute bacterial endocarditis.

Dr. Ponseti: I think we should ask Dr. McKee to point out to us why he didn't culture anything from this man's blood, and to add any comments he may care to make about this case.

Dr. Albert P. McKee, Bacteriology: If you are a bacteriologist, you know that isolating alpha hemolytic Streptococci is not difficult, but if there are any Proteus vulgaris around, they will overgrow the entire plate. Thus, getting other organisms out from underneath the Proteus film is next to impossible, for each time that you transfer the desired organism, you take the Proteus with you. Yet, I criticize the bacteriologist for not having made a stain of the valve and discovering more than one organism there. Some gram-positive ones should have been noted, and Proteus vulgaris is not one of them. If the smear was made—and I can't be sure that it wasn't—some special effort should have been made to get the organism away from the Proteus. Now this may be hard, but it was done six months later, and I think it could have been done even better on the earlier occasion.

I'll defend myself quickly now. The first I knew of this case was a few days ago, six months after the patient's death, but even so, I was still able to isolate the organism, alpha hemolytic Streptococcus, from the heart valve by culturing it in the presence of certain antibiotics, streptomycin and aureomycin. The plate containing aureomycin grew out two kinds of colonies that had not been described as present in the original culture. One was the alpha hemolytic Streptococcus, and the other was a diphtheroid.

Before attaching significance to any organisms other than the Streptococcus, we should need to seek confirmation from the patient. We should have to show that the patient had an antibody against those organisms, thus establishing that he had done business with them recently. Why Dr. Zimmerman and I did not recognize the alpha Streptococcus in the sections is readily explainable, I think. Even after it had been cultured out, it appeared abnormal. It showed beading, and every once in a while it failed to divide. Probably the antibiotics were responsible. Nevertheless, biologically, it was not a Pneumococcus, but a Streptococcus—an alpha hemolytic Streptococcus, perhaps slightly altered by the influence of the antibiotics. On a morphologic basis only, it would have been easy to mistake it for a Nocardia. Dr. Zimmerman discovered that he had a piece of tissue in the deep freeze, and from it we were able to culture organisms and make a positive identification. Having no serum from the patient, we have been unable finally to settle the relative significances of the isolated organisms.

SUMMARY OF NECROPSY FINDINGS

Dr. Zimmerman: The chief finding at autopsy, and the cause of death, was acute endocarditis with rupture of the anterior cusp of the aortic valve. An abscess extended from the valve base, through the valve rings and into the base of the near tricuspid valve leaflet. The heart was dilated.

Alpha hemolytic Streptococci and Proteus vulgaris were cultured from the valvular vegetation, and large masses of gram-negative organisms (Proteus vulgaris) were seen in the microscopic sections. Also, there were numbers of branching gram-positive organisms which on a morphologic basis belong to the genus Nocardia. No other organisms were recognized by histologic and bacteriologic methods. Alpha hemolytic Streptococci

and/or Nocardia was, or were, the causative agent(s).

One of the findings, though it had no apparent clinical significance, was patchy pulmonary fibrosis due to silicosis. There were also some calcified adhesions of the pleura anterolaterally in the right hemithorax. There was hyperplasia of the myeloid elements of the bone marrow.

ANATOMIC DIAGNOSES

1. Acute endocarditis of aortic and tricuspid valves, and cardiac abscess due to alpha hemolytic Streptococci
2. Rupture of anterior aortic valve cusp
3. Silicosis, mild (subclinical)
4. Myeloid hyperplasia of bone marrow.

Coming Meetings

In State

Nov. 6-7	**Trauma and Fractures.** S.U.I., Iowa Ctiy
Nov. 8-9	**Obstetrics & Gynecology.** S.U.I., Iowa City
Dec. 2-4	**North Central Section, American Urological Society.** SUI, Iowa City
Dec. 11-12	**Tumor Conference Sponsored by Iowa Division, Am. Cancer Society and SUI College of Medicine.** Med. Amphitheatre, Iowa City

Out of State

Nov. 1-2	**Southern Allergy Association.** Charleston, S. C.
Nov. 1-3	**Office Management of Diseases of Metabolism (Columbia University).** Mt. Sinai Hospital, N.Y.C.
Nov. 1-3	**Cardiac Arrhythmias (American College of Physicians).** Philadelphia General Hospital, Philadelphia
Nov. 1-30	**Clinical Obstetrics (Harvard University).** Boston Lying-In Hospital, Boston
Nov. 1-30	**Clinical Traineeship in Pulmonary Disease.** U. of Kansas Med. Ctr., Kansas City, Kans.
Nov. 3-6	**Ninth Annual Scientific Session, California A.G.P.** Hotel Statler, Los Angeles
Nov. 3-8	**American Society of Plastic & Reconstructive Surgery.** Fairmount and Mark Hopkins Hotels, San Francisco
Nov. 3-9	**Pan American Congress of Pharmacy & Biochemistry.** Washington, D.C.
Nov. 3-9	**Pan American Congress of Endocrinology.** Buenos Aires
Nov. 4-6	**Gallbladder Surgery.** Cook County Graduate School of Medicine, Chicago
Nov. 4-6	**Gynecology.** U. of Kansas Medical Center, Kansas City, Kans.
Nov. 4-6	**American Association of Blood Banks.** Sherman Hotel, Chicago
Nov. 4-7	**Omaha Mid-West Clinical Society.** Sheraton-Fontanelle Hotel, Omaha
Nov. 4-8	**Forensic Pathology.** Armed Forces Institute of Pathology, Washington, D.C.
Nov. 4-8	**Alimentary, Cardiovascular, Renal and Respiratory Diseases (Chicago Medical Society).** Knickerbocker Hotel, Chicago
Nov. 4-8	**Ophthalmoscopy.** N.Y.U., N.Y.C.
Nov. 4-8	**Practical Electrocardiography, Course "A."** Beth Israel Hospital, Boston
Nov. 4-9	**Cardiovascular Radiology for Specialists.** U. of Minnesota Center for Continuation Study, Minneapolis
Nov. 4-15	**Practical Course in Cystoscopy.** Cook County Graduate School of Medicine, Chicago
Nov. 4-15	**General & Surgical Obstetrics.** Cook County Graduate School of Medicine, Chicago
Nov. 4-15	**Laryngology & Laryngeal Surgery.** Temple University, Philadelphia
Nov. 4-15	**Gastroscopy and Gastroenterology.** Cook County Graduate School of Medicine, Chicago
Nov. 4-16	**Bronchoesophagology.** U. of Illinois, Chicago
Nov. 4-16	**Congenital & Heart Disease in Infants & Children.** Cook County Graduate School of Medicine, Chicago
Nov. 4-16	**Endaural Surgery.** N.Y.U., N.Y.C.
Nov. 4-22	**Mobilization of Stapes (Columbia University).** Mt. Sinai Hospital, N.Y.C.
Nov. 4-29	**Surgery of Gastrointestinal Tract (Columbia University).** Mt. Sinai Hospital, N.Y.C.
Nov. 4-Dec. 9	**Photomicrography.** U.C.L.A., Los Angeles
Nov. 6-7	**Gynecology.** University of Buffalo, Buffalo
Nov. 6-8	**Diseases of Blood and Blood-Forming Organs.** U. of Tennessee, Memphis
Nov. 6-8	**Chest Diseases.** City of Hope, Duarte, California
Nov. 6-9	**Congress of Neurological Surgeons.** Statler Hotel, Washington
Nov. 7-8	**Graduate Symposium, American Geriatrics Society.** Waldorf-Astoria Hotel, N.Y.C.
Nov. 7-9	**Congress of Neurological Surgeons.** Washington, D.C.
Nov. 7-9	**Surgery of Hernia.** Cook County Graduate School of Medicine, Chicago
Nov. 7-9	**Clinical Endocrinology (University of Southern California).** Hotel Statler, Los Angeles
Nov. 8-9	**Gastroenterology.** Emory University, Atlanta
Nov. 8-9	**Otolaryngology.** U.C.L.A., Los Angeles
Nov. 8-9	**Ear, Nose & Throat.** U.C.L.A., Los Angeles
Nov. 9	**Tumors of Childhood (University of California).** Children's Hospital, San Francisco
Nov. 9-11	**Eighth Annual AMA County Medical Societies Civil Defense Conference.** Morrison Hotel, Chicago
Nov. 11-13	**Diabetes, Hyperinsulinism and Hypoglycemia.** N.Y.U.-Bellevue Med. Ctr., N.Y.C.
Nov. 11-13	**Visual Optics & Refraction (Am. Optical Co.).** Southbridge, Massachusetts
Nov. 11-14	**Internal Medicine.** Indiana University, Indianapolis
Nov. 11-14	**Pediatric Endocrinology & Related Metabolism.** N.Y.U.-Bellevue Med. Ctr., N.Y.C.
Nov. 11-14	**Southern Medical Association.** Miami Beach
Nov. 11-15	**Annual Meeting, American Public Health Assn.** Public Auditorium, Cleveland
Nov. 11-15	**Arthritis & Allied Rheumatic Disorders.** N.Y.U.-Bellevue Med. Ctr., N.Y.C.
Nov. 11-15	**Internal Medicine.** U. of Washington, Seattle
Nov. 11-15	**Electrocardiography.** N.Y.U., N.Y.C.
Nov. 11-15	**Hematology.** N.Y.U., N.Y.C.
Nov. 11-15	**Obstetrics, Gynecology & Pediatrics (Chicago Medical Society).** Knickerbocker Hotel, Chicago
Nov. 11-15	**Chest Diseases (American College of Chest Physicians).** Park-Sheraton Hotel, N.Y.C.
Nov. 11-16	**Investigation of Homicide.** U. of Cincinnati, Cincinnati
Nov. 11-22	**Surgical Technic.** Cook County Graduate School of Medicine, Chicago
Nov. 11-23	**Congenital and Acquired Malformations of the Heart in Infants and Children.** Cook County Graduate School of Medicine, Chicago
Nov. 12-14	**Electrocardiographic Interpretation & Cardiology.** U. of Wisconsin, Madison
Nov. 13	**Neurologic Examination and Anciliary Procedures.** U. of Indiana, Indianapolis
Nov. 13	**Pediatric Teaching Day.** Albany Medical College, Albany
Nov. 13-15	**Clinical Chemistry.** Frank E. Bunts Educational Institute, Cleveland
Nov. 14	**Emotional Problems in General Practice.** U. of Indiana, Indianapolis
Nov. 14-22	**Pan-Pacific Surgical Association.** Honolulu
Nov. 15-17	**Annual Symposium, Los Angeles County Hospital Society of Graduate Internists.** Hotel Statler, Los Angeles
Nov. 15-16	**Otolaryngology.** U.C.L.A., Los Angeles
Nov. 16	**American School Health Association.** Hollenden Hotel, Cleveland

Nov. 17-22	**Radiological Society of North America.** Palmer House, Chicago
Nov. 18-19	**Varicose Veins.** Cook County Graduate School of Medicine, Chicago
Nov. 18-20	**Gonioscopy & Glaucoma.** Brooklyn Eye & Ear Hospital, Brooklyn
Nov. 18-20	**Physical Medicine for Specialists.** U. of Minnesota Center for Continuation Study, Minneapolis
Nov. 18-22	**Electrocardiography & Treatment of Arrhythmias.** Mt. Sinai Hospital, Miami Beach
Nov. 18-22	**Clinical Bronchoscopy.** Cook County Graduate School of Medicine, Chicago
Nov. 18-22	**Cardiovascular Disease.** National Institutes of Health, Bethesda, Maryland
Nov. 18-22	**Inter-American Congress of Pan American Medical Assn.** Mexico City
Nov. 18-22	**Peripheral Vascular Diseases.** N.Y.U.-Bellevue Med. Ctr., N.Y.C.
Nov. 18-22	**Practical Management of Psychiatric Problems (Columbia University).** Mt. Sinai Hospital, N.Y.C.
Nov. 18-22	**Surgery of Colon & Rectum.** Cook County Graduate School of Medicine, Chicago
Nov. 18-22	**Practical Management of Psychiatric Problems (Columbia University).** Mt. Sinai Hospital, N.Y.C.
Nov. 18-23	**Review of Clinical Pediatrics.** N.Y.U.-Bellevue Med. Ctr., N.Y.C.
Nov. 18-Dec. 2	**Pacific Science Congress.** Bangkok, Thailand
Nov. 20	**Medical & Surgical Emergencies (Ohio Academy of General Practice).** Commodore Perry Hotel, Toledo
Nov. 20	**Diabetes Mellitus.** Drake Hotel, Chicago
Nov. 20-21	**Dermatology.** U. of Buffalo, Buffalo
Nov. 20-22	**Physiologic Basis of Hematology.** City of Hope, Duarte, California
Nov. 21-23	**Western Surgical Association.** Hotel Utah, Salt Lake City
Nov. 22-23	**AMA Conference on Mental Health.** Drake Hotel, Chicago
Nov. 22-25	**Eighth Annual Postgraduate Seminar.** Mt. Sinai Hospital, Miami Beach
Nov. 23	**Fall Medical Refresher, U. of Illinois.** Professional College Campus, Chicago
Nov. 25-27	**James C. Kimbrough Urological Seminar.** Brooke Army Medical Ctr., Ft. Sam Houston, Texas
Nov. 25-27	**American Academy for Cerebral Palsy.** Roosevelt Hotel, New Orleans
Dec. 1-15	**Fourth Bahamas Medical Conference.** Fort Montagu Beach Hotel, Nassau
Dec. 2	**Regional Conference, AMA Committee on Aging.** Bellevue-Stratford Hotel, Philadelphia
Dec. 2	**Regional Conference, AMA Committee on Maternal & Child Care.** Bellevue-Stratford Hotel, Philadelphia
Dec. 2-3	**Interim Session, American College of Chest Physicians.** Warwick Hotel, Philadelphia
Dec. 2-4	**Infertility (N.Y.U. Department of Obstetrics & Gynecology).** Bellevue Medical Center, N.Y.C.
Dec. 2-4	**Diagnosis and Treatment of Poisonings (N.Y.U.).** Bellevue Medical Center, N.Y.C.
Dec. 2-6	**Pediatric Cardiology.** N.Y.U., N.Y.C.
Dec. 2-6	**Application of Histochemistry to Pathology.** Walter Reed Army Medical Center, Washington
Dec. 2-6	**Surgery of the Cornea (N.Y.U.).** Bellevue Medical Center, N.Y.C.
Dec. 2-6	**Congenital & Rheumatic Heart Disease in Infants & Children.** Cook County Graduate School of Medicine, Chicago
Dec. 2-6	**Pediatric Cardiology (N.Y.U.).** Bellevue Medical Center, N.Y.C.
Dec. 2-7	**Clinical Cardiopulmonary Physiology in Internal Medicine.** U. of Vermont, Burlington
Dec. 2-13	**Cystoscopy.** Cook County Graduate School of Medicine, Chicago
Dec. 2-13	**Air Pollution.** N.Y.U., N.Y.C.
Dec. 2-13	**Diagnostic X-ray.** Cook County Graduate School of Medicine, Chicago
Dec. 2-13	**Pediatric Cardiology.** Cook County Graduate School of Medicine, Chicago
Dec. 2-13	**Surgical Technic.** Cook County Graduate School of Medicine, Chicago
Dec. 2-14	**Endoscopy: Bronchoesophagology & Laryngology.** N.Y.U., N.Y.C.
Dec. 2-14	**Diagnostic Radiology Course I.** Cook County Graduate School of Medicine, Chicago
Dec. 3-6	**AMA Clinical Meeting.** Convention Hall and Bellevue-Stratford Hotel, Philadelphia
Dec. 4-6	**Annual Ophthalmological Conference.** University of California, San Franciso
Dec. 4-7	**Childhood Diabetes.** University of California, San Francisco
Dec. 4-7	**Ocular Manifestations of Systemic Disease.** University of California, San Francisco
Dec. 5-7	**Fractures for General Physicians.** University of Minnesota Center for Continuation Study, Minneapolis
Dec. 5-7	**American Rheumatism Association.** Washington, D. C.
Dec. 6-7	**Arthritis & Rheumatism.** U.C.L.A., Los Angeles
Dec. 6-7	**Geriatric Conference.** University of Nebraska, Omaha
Dec. 6-7	**Ophthalmology** (State University of New York). Hotel Syracuse, Syracuse
Dec. 6-7	**Orthopedics & Fractures.** University of California, San Francisco
Dec. 6-7	**Physical Medicine.** University of California, San Francisco
Dec. 7	**Symposium on Radioisotopes (Milwaukee Academy of Medicine).** Brooks Memorial Union, Marquette University, Milwaukee
Dec. 9-11	**Symposium on Fluorides.** University of Cincinnati, Cincinnati
Dec. 9-13	**Clinical Bronchoscopy.** Cook County Graduate School of Medicine, Chicago
Dec. 9-13	**Symposium on Diseases of the Chest (American College of Chest Physicians).** Ambassador Hotel, Los Angeles
Dec. 11-12	**Ophthalmology.** Frank E. Bunts Educational Institute, Cleveland
Dec. 13-15	**Clinical Cardiovascular Physiology.** University of California, San Francisco
Dec. 16-17	**Varicose Veins.** Cook County Graduate School of Medicine, Chicago
Dec. 18	**Clinical Pediatrics.** Indiana University School of Medicine, Indianapolis
Dec. 28-29	**124th Annual Meeting, American Association for the Advancement of Science.** Indianapolis

LECTURE AT CREIGHTON

The Seventh Annual Dr. Eben J. Carey Memorial Lecture sponsored by Creighton University and the Phi Chi Medical Fraternity will be delivered this year on Wednesday evening November 20, at 8:30 in the Creighton Student Union, Twenty-fifth and Cass Streets, Omaha. John S. Hirschboeck, M.D., dean of the Marquette University School of Medicine and a specialist in hematology, will speak on "New Developments in Pernicious Anemia." All physicians are cordially invited, and the AAGP will allow 1½ hours of Category I credit to each of its members who attend.

UPJOHN COMPANY'S "GRAND ROUNDS"

At 8:00 p.m. on November 13, the closed-circuit television show "Grand Rounds," sponsored by the Upjohn Company, will be received at the Assembly Hall of the Omaha Civic Auditorium. It will deal with coronary artery disease, and by means of a split-screen technic it will include a discussion between authorities in England and this country. Two important surgical technics will be demonstrated "live": endarectomy, the removal of atherosclerotic obstructions by means of a newly-designed curette, and the so-called "Beck-1 revascularization," in which powdered asbestos is applied to the heart muscle. "Grand Rounds" is approved for Category II credit by the AAGP.



POWERS OF THE GRIEVANCE COMMITTEE

At the Annual Conference of County Medical Society Officers held in Des Moines on October 20, Dr. William M. Krigsten, of Sioux City, said that the ISMS Grievance Committee, of which he is secretary, had asked Attorney Robert B. Throckmorton for an opinion on its scope and function, and that the membership of the Society would be interested in seeing a summary of certain parts of that document.

Mr. Throckmorton began by saying that he had done none of the extensive briefing or legal research which might become necessary when or if the Grievance Committee experiences difficulties in regard to a particular controversy. Rather, his observations were to be based upon his interpretation of the Committee's own rules, upon what he had heard during a recent AMA panel discussion about grievance committees and upon what attorneys for other state medical societies had told him in private conversations on that occasion.

He pointed out that the ISMS Grievance Committee is intended primarily to concern itself with alleged infractions of medical ethics. In the vast majority of instances, of course, questions that arise have resulted from misunderstandings about fees, but technically at least, even those can be ethical questions, for the "AMA Principles of Medical Ethics" contains the passage (in Section 7) "[The physician's] fee should be commensurate with the services rendered and the patient's ability to pay." In addition, of course, there are a few instances in which it is claimed that doctors have been otherwise in the wrong.

The function of the Grievance Committee should at all times be either that of a mediator or that of a grand jury. Thus, in a disagreement about a fee, the Committee should do what it can to achieve a settlement by means of persuasion or compromise, but should never undertake to impose a settlement upon the disagreeing parties. When it is the opinion of the Committee that a doctor's performance has left something to be desired, it may tell him so, but under no circumstances may it undertake to discipline him. When disciplinary action may be indicated, the Grievance Committee should file charges with the board of censors of the physician's medical society, with the councilor from his district, with the ISMS Judicial Council, with the State Board of Medical Examiners or with the district court.

In short, whenever charges against a doctor could, if proved, result in disciplinary action, the Grievance Committee's function is to decide whether the allegations appear to justify a more formal hearing and determination by a tribunal.

The distinction between *mediation,* on the one hand, and *adjudication* or *arbitration,* on the other, is an important one. Mediation, which is the Grievance Committee's province, can take place only when both parties to a dispute are "willing to accept the advice of the Committee for reconciliation of the complaint, and so indicate in writing."

When it cannot mediate, the Committee has but two alternative courses of action: referral or dismissal.

From this opinion it is apparent that doctors against whom complaints have been lodged should respond with alacrity to the Committee's request for information and should offer to cooperate fully, rather than take the chance of the Committee's forwarding the question to a judicial body for decision.

OPHTHALMOLOGISTS ASK FOR HELP

One of the most notorious examples of public confusion in the field of medical care is in regard to the difference in training and function between opthalmologists and optometrists.

The National Medical Foundation for Eye Care, a newly-established organization of which Dr. Alson E. Braley, head of the Department of Ophthalmology at the S.U.I. College of Medicine is a director, has prepared a leaflet designed to help the public make the necessary distinctions, and it would like the help of generalists and specialists in putting it into the hands of as many people as possible.

The leaflet, entitled "What Is an Ophthalmologist?" contains no more than brief, objective definitions of the terms *ophthalmologist, oculist, optician* and *optometrist,* and a statement of the purposes of the National Medical Foundation for Eye Care.

Physicians who think they may be willing to place some copies in their waiting rooms where their patients may pick them up are encouraged to request them from the Foundation, 250 West 57th Street, New York City 19.

THE GENERALIST AND CANCER

At the present time, the most potent weapon the medical profession possesses for the control of cancer is early diagnosis. Once the diagnosis is established, the standard modes of treatment are still

surgery and radiation therapy, although there is hope in some types of neoplastic disease that chemotherapy may prove beneficial. But right now, the crux of cancer-control rests in early diagnosis, and at that point the generalist can play an important role.

It is the generalist who sees the skin lesions and hears the stories of indigestion, or cough, or blood in the stools, or leukorrhea. These complaints are very common in the practice of any generalist. If he were to *guess,* benignity would be in his favor. But in modern Medicine, guessing has no place. The doctor and the patient both have the right to whatever diagnostic procedures may be indicated.

This is a situation demanding two major traits in the generalist. In the first place, the doctor must be cancer-conscious 100 per cent of the time. Cancer-consciousness is a mental discipline that should be as much a part of the general practitioner as is his pulse.

Secondly, the general practitioner should always be insistent on finding the causes for all complaints. This entails meticulous examination, including special procedures as indicated. The physical examination itself should be careful, thorough and complete. As a result of a complete history and the physical findings, special examining procedures should be selected. A proctoscopic examination should be done far more often than it is. A high percentage of malignancies of the colon can be seen, if we only take the trouble to look for them.

Cytology is a handy modality. In Memphis, where a cytology screening survey has been under way for five years, of the first 108,000 women on whom cervical smears were taken, the pathologist recommended biopsy in 1,842, and of that number 1,406 submitted to biopsy. From this group, 786 cases of uterine cancer were definitely diagnosed. But the most amazing statistic coming from this screening is that 59 per cent of these 786 cases had been "unsuspected" either by doctors or patients. This should make us all stop dead in our tracks and *think,* every time we are tempted to make a diagnosis of cervical erosion.

X-ray examinations are very frequently necessary as a follow-up to the physician's suspicion, and whenever x-ray pictures are indicated, no generalist should be satisfied with less than the most skilled reading of roentgenograms that it is possible for him to obtain. The fluorogram and plate record truly record what is present. The trained eye and the experienced interpretation are *all-important.*

Where does the generalist stand with reference to all of the minor complaints which might indicate an early malignancy? In the front line! Since he is the one most likely to hear the complaints and the one most likely to hear them first, *his* is the most important job in early diagnosis and treatment. Time is most precious to the cancer victim. Thus, the generalist has an important challenge.

Only if we are constantly on the alert can we find cancer early enough for it to be amenable to proper therapy. And if we suspect it, immediate specific diagnostic procedures are the first order of management.

BLOOD BANKING NEEDS AND GOALS

The phenomenal growth that is taking place in blood banking has required intensive studies for further coordination. Thus, in 1957, the physicians and others who direct the activities of blood banks in Iowa are being asked to complete no fewer than three questionnaires. Because some of the questions have more or less duplicated one another, and because the organizations that concern themselves with such matters are relatively numerous and have apparently overlapping objectives, an explanation seems to be in order.

The Association of Blood Banks has sponsored an energetic educational program and publishes many bulletins and manuals which would be useful to blood banking personnel in the State of Iowa. Much information is available to blood banks through the various expert committees of this organization. It is for this reason that the ISMS Committee on Blood Banking is thinking seriously of advocating the formation of an Iowa State Association of Blood Banks for affiliation with the national organization.

Iowa's doctors will hear more about the National Blood Bank Clearing House Program. This national system for blood bank credit exchange was sponsored by the American Association of Blood Banks in 1953. Under this program, the United States is divided into five districts, of which the North Central Blood Bank Clearing House (Chicago) is the one serving this area. The organization resembles a financial clearing house in that it makes paper credit or monetary exchanges from one blood bank to another or from one district of the country to another. The program should be increasingly valuable as a means of assistance in locating rare types of blood. The Clearing House program greatly reduces the volume of actual blood shipped and thereby avoids unnecessary expense for blood banks and reduces the time and risk involved in blood shipments. The Blood Bank Committee of the Iowa State Medical Society believes that Iowa doctors should urge their blood banks to join this program.

It became apparent to many blood bankers as long as five years ago that some organization was needed to coordinate the many associations and societies having vital interests in blood banking. It has been a matter of grave concern that national emergencies might find us unprepared to coordinate our efforts in mobilizing blood for the nation. The Joint Blood Council, Inc., which has been responsible for two recent questionnaires, is

a non-profit corporation organized to provide this urgently needed liaison. It had its legal beginning on March 16, 1955, and established its national office at 1832 M Street, Washington, D. C., on November 15 of that year. It is sponsored and controlled by the American Association of Blood Banks, the American Hospital Association, the American National Red Cross, the AMA and the American Society of Clinical Pathologists, and its prime purpose is "to establish a national blood program in order to assure an adequate supply of blood and blood derivatives to the civilian and military population at all times, including times of peace and emergency."

RECENT QUESTIONNAIRES

The initial step toward the accomplishment of that principal objective, quite obviously, had to be a survey of the current situation as regards blood banking facilities, blood supplies and blood use in the United States, and for that purpose the Joint Blood Council undertook a postal-card inquiry on blood usage during the year 1956. The results were unsatisfactory, however. For one thing, it was discovered that a "unit" of blood meant 480 cc. to some people and 250 cc. to others. For another, "blood bank" has been used in some areas to designate a list of prospective donors, rather than a place where whole blood is stored under refrigeration, processed and distributed. Consequently, a second and longer questionnaire had to be circulated.

The second 1957 survey by the Joint Blood Council is intended to secure answers to the following questions, most of them posed by the Office of Defense Mobilization and by Civil Defense: (1) Are the nation's blood transfusion services capable of rapid expansion in time of emergency? (2) Where are they located? (3) How are they organized and operated? (4) What areas do they serve? (5) What is their annual volume of business? and (6) How are they related to allied services such as tissue banks? At the industry level, pharmaceutical and hospital supply firms expect the survey to enable them to plan with more assurance in producing blood derivatives, blood bank supplies and equipment, laboratory apparatus and research instruments.

The Blood Banking Committee of the Iowa State Medical Society apologizes for the plethora of inquiries, but urges blood bank directors to complete its own questionnaire sent out June 14, which is most pertinent to the problems within the State of Iowa. The Committee feels that nearby states have already progressed far beyond Iowa in the organization and standardization of blood bank facilities. Iowans have some catching up to do. Information that the Committee gathered in 1955 revealed that of 58 blood banks then in operation in this state, 26 per cent had no apparent medical directors, and 75 per cent had no official access to the many fine publications of the American Association of Blood Banks. Besides urging the correction of those deficiencies, the Committee wants (1) to help prevent waste and facilitate blood transfers to our medical centers; (2) to secure the adoption of the best typing and cross-matching technics; and (3) to get local managements to consider cooperative buying and other joint action.

HISTORY OF BLOOD BANKS

Historically speaking, blood banking is a veritable infant which is growing administratively and technically with incredible speed. The technical discoveries essential to the development of blood banking began with the discovery of major blood groups by Landsteiner in 1900, and the introduction of sodium citrate as a simple and relatively non-toxic anticoagulant in 1914. The American Red Cross entered the picture to help satisfy the emergency requirements during World War I. Following the first great war, the hospitals seemed rather slow in recognizing the blood bank's potential for protection and for daily use in civilian life. The first blood bank in the United States was organized at the Cook County Hospital, in Chicago, in 1936. From that time onward, the rapid growth of blood banking soon outstripped all available administrational organization, and the Red Cross, which had liquidated its blood-banking interests in 1942, was asked by the government to reenter this program in 1947.

The outbreak of hostilities in Korea in 1950 found blood banks rather well prepared to meet the needs of our soldiers. The American Association of Blood Banks, a small but rapidly growing infant at that time, was of considerable help to the Red Cross, particularly through the facilities of the California system of blood banks. Unfortunately, there was still little coordination on the national level. Conflicts arose between the Red Cross and private blood banks, and in order to find a way out of this confusion, the Medical Policy Committee of the Red Cross called a meeting which led to the Boston Agreement of 1950. That understanding, later ratified by the American Association of Blood Banks, the AMA, the AHA and the Red Cross, provided for free exchange of blood between Red Cross blood centers and other blood banks on a unit-for-unit basis, and urged submission to blood-banking standards to be set by the National Institutes of Health in time of emergency.

Later, when it became apparent that there were different interpretations of the language and intent of the Boston Agreement, the original parties to it, along with the American Society of Clinical Pathologists, decided that a voluntary national organization should be established to insure an adequate supply of safe blood in peace and emergency, and to stimulte blood research. Thus the Joint Blood Council came into being.

The Joint Blood Council itself does not procure

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blood, does not process or store it, does not exchange blood credits and will not itself engage in blood research. Rather, operating primarily through its member institutions, it tries to stimulate and coordinate all such activities. In the event of a national emergency, it will seek to establish emergency blood donor centers in communities not served by existing blood bank facilities or to expand existing facilities in order to meet both defense and civilian requirements.

Much Council work is done through committees. The Scientific Committee is currently working up standards for accreditation of blood transfusion services. It will submit a report in conjuction with the Standards Committee of the American Association of Blood Banks.

The Blood Procurement Committee is still in the *ad hoc* stage. It is exploring frames of reference within which to work. Several national organizations representing labor, management, veterans and other segments of American life may cooperate in this phase of the Council's work, but according to its articles of incorporation they cannot have a share in establishing its policies.

One of the temporary committees now functioning, the Project Advisory Committee, is the group that undertook the postal-card survey designed to reveal the number of blood transfusions performed during 1956 and the sources of blood that were utilized during that year. Returns were secured from 4,900 (57 per cent) of the 8,569 hospitals and other facilities that are potential users of blood in the U. S. and its territories, but as of August 30, 1957, the summary of findings had not yet been published.

The Iowa State Medical Society's Committee on Blood Banking urges Iowa doctors to cooperate in completing and returning these comprehensive questionnaires prepared by it and by the Joint Blood Council. The information requested has great potential value in assisting the rapid advance of blood banking coordination at the local and at the national level.

NO DRAFT OF DOCTORS DURING NEXT 20 MONTHS

According to Gerald Gross's WASHINGTON REPORT ON THE MEDICAL SCIENCES, it is highly improbable that the armed forces will call up any physicians through Selective Service before July, 1959. Barring the start of a war, it is expected that the necessary numbers of men can be secured through the granting of commissions to the recent graduates who indicated willingness to start military service following internship training or to accept residency deferments. In recent weeks, 2,904 assented to commissioning, and the actual commissioning of three-fourths of that number would remove the need for any involuntary call-up during the 1958-1959 fiscal year.

AMA CIVIL DEFENSE CONFERENCE

Radiation fallout will be one of the major topics of discussion at the eighth annual County Medical Societies' Civil Defense Conference at the Morrison Hotel, Chicago, November 9 and 10.

Held under the sponsorship of the AMA Council on National Defense, the conference is designed to help medical societies and all health personnel plan effective programs for disaster and civil defense emergencies.

The speakers will include Dr. Crawford F. Sams, medical officer in charge of a radiation study project at the University of California, and Congresswoman Martha W. Griffiths, of Michigan, who will report on the status of civil defense legislation. Reports will also be given on experience that has been gained through several exercises conducted under simulated disaster conditions.

ENZYME TESTS CAN BE MISUSED

The misuse of enzyme tests for controlling insulin intake in diabetes "may easily have dire consequences," according to a paper by Victor Jablokow, M.D., Merril Hutchins, Sc.B., and Edwin M. Knights, Jr., M.D., in the September-October issue of DIABETES.* The authors are members of the staff in pathology at Harper Hospital, Detroit.

These highly sensitive tests have proved rapid, efficient and inexpensive means of detecting glucose, but these men say that the results need critical evaluation.

They reviewed a total of 1,940 tests on 360 glucose dilutions in urine performed by 36 physicians and technologists, and found that though the preparations were highly accurate in detecting the presence of urinary sugar, the results were misleading quantitatively. One of them gave misleading results when the glucose concentration exceeded 0.1 per cent, and even when the glucose dilutions were as high as 5.0 per cent, only 32 of the 108 samples read 4+. "Higher concentrations of glucose were consistently undervaluated, a situation which could prove dangerous in the poorly controlled diabetic," the authors asserted. They also said that the extreme sensitivity of both tests might lead a diabetic patient to overdose himself into insulin shock.

These findings are similar to those reported earlier by Dr. J. R. Leonards, of Western Reserve.** He found an incorrect interpretation in as many as 502 out of 804 tests. "Many patients," Dr. Leonard said, "could be 'spilling' large amounts of sugar in the urine for considerable periods of time, but the reading would still be interpreted as 0.5 per cent and the insulin dosage might not be increased."

* Jablokow, V., Hutchins, M., and Knights, E. M., Jr.: Urine glucose testing by glucose oxidase methods. Diabetes, **6**:426-427, (Sept.-Oct.) 1957.

** Leonards, J. R.: Evaluation of enzyme tests for urinary glucose. J.A.M.A., **163**:260, (Jan. 26) 1957.

President's Page

As president of the Iowa State Medical Society, I am accorded the special privilege of presenting my views on subjects of interest to the medical fraternity through the medium of this JOURNAL.

In preparing to set down some of the thoughts which have occurred to me, I find myself frequently turning to speculation and contemplation about our Society. I ask myself just what sort of body this is that I serve as president. Then I wonder just what are the meaning and value of my membership in it. Why did I join in the first place, and what do I expect to get out of it?

These are questions which, I suppose, seldom occur to other members. In fact, I never thought about them seriously myself until I assumed the responsibilities of president of the organization and undertook writing the "President's Page" of the JOURNAL. It was only then that I came to realize how almost automatically a practicing physician joins his medical society, and then pays his dues and keeps up his membership out of habit. He dispenses with the matter as a routine like paying the monthly rent and regards it as a necessity, rarely thinking of the Society as either the actual or the potential embodiment of his personal thoughts, and seldom realizing the part it can play in his life's fulfillment.

The first and most important concern of the physician is the welfare of his patients, and the medical society is the means by which all—or almost all—of the physicians of a given area can safeguard the welfare of large groups of people. The Iowa State Medical Society enables the doctors of this state to share with one another the improvements in therapy that they have discovered and helps them to learn of the findings that have been made elsewhere in the world. Then too, the Society enables them to be heard regarding legislative proposals affecting the health of people generally. In a democracy, quite properly, it is numbers that count, and though the individual doctor is an influential citizen in his own community, he can make his influence felt in larger social groups only by speaking in unison with physicians throughout the area. Furthermore, there are a growing number of projects in which doctors are being asked to cooperate as a group, rather than as individuals. Civil Defense is a representative example of these. Only by participating and, indeed, exerting leadership in all of these activities can Twentieth Century doctors achieve their objective of safeguarding the welfare of their patients, and the State Medical Society enables them to accomplish it.

The Society has dedicated itself to the maintenance of a high standard of medical practice, and it seeks to promote the improvement of skills and services for the benefit of the public rather than for the personal profit of its members. But its efforts are sometimes misunderstood. During the first 50 years of our Society's 108-year history, it sought chiefly to raise educational and licensure standards for physicians. Its endeavors brought down upon it the wrath of many people, for in the growing Mid-West it was felt that the disqualification of ill-trained or otherwise incompetent practitioners deprived the public of much-needed medical care. Time, of course, has proved that the Society was right.

Our Medical Society benefits us as individual members only in enabling each of us to know that he is working among well-trained men dedicated to human betterment. It helps us as a group to improve both our methods and the conditions under which we practice. Thus, it aids us in achieving our goal—service to mankind.

Fred Sternagel

President

THE JOURNAL *Book Shelf*



BOOKS RECEIVED

1957-1958 YEAR BOOK OF MEDICINE, ed. by *Paul B. Beeson*, M.D., *Carl Muschenheim*, M.D., *William B. Castle*, M.D., *Tinsley R. Harrison*, M.D., *Franz J. Ingelfinger*, M.D., and *Philip K. Bondy*, M.D. (Chicago, The Year Book Publishers, Inc., 1957. $7.50).

THE BIOLOGIC BASIS OF CANCER MANAGEMENT, by *Freddy Homburger*, M.D. (New York City, Hoeber-Harper, Inc., 1957. $10.00).

BOOK REVIEWS

RADICULAR SYNDROMES, WITH EMPHASIS ON CHEST PAIN SIMULATING CORONARY DISEASE, by *David Davis*, M.D. (Chicago, The Year Book Publishers, Inc., 1957. $6.50).

This is a 250-page attempt to solve a knotty problem which frequently confronts the internist—namely, chest pain of radicular origin which simulates coronary disease. The etiology of root syndromes is developed. Knowledge regarding the etiology of these conditions appears to be very vague and incomplete, but the reader nevertheless, is well repaid for struggling through the anatomy and some of the physiology of the vertebrae and spinal cord. The characteristics of root pain are reviewed, and diagnostic findings in root syndromes are well described. The multiplicity and confusion of clinical syndromes due to root pain are described in great detail. The response of this condition to traction of the cervical spine and correction of postural abnormalities, physiotherapy, etc., is of some interest.

Because in clinical cases there are rarely any pathologic specimens, this appears to be a difficult subject to study adequately. This book should serve as groundwork for further study of the causes and proper treatment of a vexing clinical problem.—*Charles H. Gutenkauf*, M.D.

HEALTH YEARBOOK, 1956, ed. by *Oliver E. Byrd*, Ed.D., M.D. (Stanford, Calif., Stanford University Press, 1957. $5.00).

This volume is the fourteenth of a series begun in 1943. The editor has included articles from 78 different periodicals or special reports which, from a health educator's viewpoint, constitute a representative sample of the public health literature for the year 1956.

The subject material is arranged in chapters such as "Health as a Social Problem," "Nutrition and Health," and "Health Services and Facilities." A complete bibliography, an author index and a subject index are included.

Since this book has very little information in any one field of public health, it will probably find its greatest use in the hands of the health educator preparing his classroom teaching notes.—*Ralph H. Heeren*, M.D.

THE CLINICAL MANAGEMENT OF VARICOSE VEINS, Second Edition, by *David W. Barrow*, M.D. (New York City, Paul B. Hoeber, Inc., 1957. $6.00).

In this revised monograph, Dr. Barrow has devoted only a small amount of space to the historic, anatomic and physiologic background of the subject of varicosities. Illustrations are profuse, and in addition there are many explanatory diagrams.

The entire subject of varicose veins and their complications in its practical aspect is covered in this treatise. The commonly accepted diagnostic methods are well explained, and the importance of such tests is properly evaluated. The standard methods of treatment are completely covered, and the importance of after-care is emphasized.

This monograph is a welcome addition to the library of everyone who is interested in the problem of varicose veins.—*R. E. Paul*, M.D.

GIFFORD'S TEXTBOOK OF OPHTHALMOLOGY, Sixth Edition, by *Francis H. Adler*, M.D. (Philadelphia, W. B. Saunders Co., 1957. $8.00).

GIFFORD'S TEXTBOOK OF OPHTHALMOLOGY first appeared in 1938, and this is the sixth edition.

The book is mainly geared to the needs of the medical student and general practitioner, and it serves that purpose admirably. Though there have not been very many changes since the last printing in 1935, the book has been brought up to date on the subject of antibiotic and hormonal therapy.

As can be expected in a book of this type, great stress is put on the correlation between eye findings and general disease, especially in the realm of neurology. The description of surgical technic is held to a minimum, but indications for surgery are clear and concisely stated. That, again, is of great value to the general practitioner.

The essentials of the theory of refraction are covered, but no attempt has been made to cover the practice of this subject.

This is one of the best textbooks for the student and general practitioner, but it will not be of much service to the experienced ophthalmologist.—*Henry H. Gurau*, M.D.

Clinical Gastroenterology, by *Eddy D. Palmer,* M.D. (New York City, Hoeber-Harper, 1957. $18.50).

One rarely has an opportunity to review a medical textbook that is new in concept, yet has impact in style and idea.

Here is a text set in easy-to-read type and printed in two-column style allowing the reader to struggle with concepts, yet not lose his place on the page. It is liberally illustrated with plates and tables, the clarity of which nearly eliminates the need for titles.

Yet this text is not unique for these attributes. It is unique in that Dr. Palmer presents a concept of "comprehensive gastroenterology." This subject is mentioned by most authors in the field as they rush on to detail history, physical examination, laboratory aides and treatment. But comprehensive gastroenterology, encompassing as it does all of these, appears to be the key to therapeutic success in this specialty. The author devotes his first chapter to the development of this concept and then weaves it as a thread through his discussion of each clinical entity in a gastroenterologist's practice.

In no field of Medicine is knowledge of the total patient more important than in gastroenterology, and nowhere is this point more forcibly driven home.

Do not look in this text for the number of milligrams of this or grains of that to prescribe for a given problem. Do not look here for the number of degrees of free acid that are consistent with the diagnosis of peptic ulcer. Rather, read this text for a clear, concise and basic concept of each disease entity in this field. Read the author's often terse explanations of the why, when and where of G.I. disease and what to do about each problem.

This text does not belong on the gastroenterologist's book shelf; rather, it belongs on his desk!—*Samuel J. Zoeckler,* M.D.

SYMPOSIUM ON RADIOISOTOPES

The Milwaukee Academy of Medicine will present a symposium on radioisotopes at the Brooks Memorial Union, at Marquette University, Milwaukee, on Saturday, December 7, and all physicians are cordially invited to attend it.

Fundamental information will be presented by a faculty consisting of William Bloom, M.D., professor of anatomy at the University of Chicago; Austin M. Brues, M.D., director of the Biology Division of the Argonne National Laboratory; Edward A. Doisy, M.D., associate professor of internal medicine at St. Louis University; Titus C. Evans, Ph.D., professor of radiation research at the S.U.I. College of Medicine; E. M. K. Geiling, M.D., Ph.D., professor of pharmacology at the University of Chicago; Harvey M. Pratt, Ph.D., senior physiologist at the Argonne National Laboratory; and Joseph F. Ross, professor of medicine and associate dean of the University of California School of Medicine. Copies of the program can be secured from the Milwaukee Academy of Medicine, 561 North Fifteenth Street, Milwaukee 3.

FEDERAL SURVEY OF REACTIONS TO ANTIBIOTICS

A summary of findings in the first nationwide survey of reactions to antibiotics was presented at the recent Symposium on Antibiotics in Washington, D. C. It covered a period from the latter part of 1953 to the early months of 1957, and the summary was presented by Dr. Henry Welch, chief of the Food & Drug Administration's Division of Antibiotics.

The survey showed a substantially higher number of reactions to penicillin than to other antibiotics. A geographic sampling was made of the severe cases handled by over 1,600 physicians, and one third (1,070) of them were classed as life-threatening. They included 809 cases of anaphylactoid shock, 107 superinfections, 70 severe skin reactions, 46 blood dyscrasias and 38 cases of angioneurotic edema with respiratory and cerebral involvement. The great majority of these life-threatening reactions, about 900, followed the use of penicillin. More than 600—the anaphylactoid shock cases—resulted from the intramuscular injection of penicillin. In 122 of these cases, penicillin had been used in combination with streptomycin or dihydrostreptomycin.

There were 72 deaths from anaphylactoid shock, all but one of which followed intramuscular injection. One followed the use of oral chloramphenicol, and one was caused by angioneurotic edema following the use of oral penicillin.

Anaphylactoid reactions occurred with about equal frequency in males and females. As regards age, it was found that the smallest number of anaphylactoid reactions occurred in children under 12 years of age. Among the older age groups, the cases were fairly evenly distributed.

The survey indicated that the broad-spectrum antibiotics, which include the three tetracyclines and chloramphenicol, cause relatively few adverse reactions, but Dr. Welch said that the possibility of staphylococcal enterocolitis should be kept in mind when these drugs are given. He did not advise against the use of penicillin or these other antibiotics, but emphasized that they should be used only when there are specific indications for them.

Three papers that were read at the Symposium on Antibiotics attested to the effectiveness of penicillinase as an antidote for allergic and other reactions following the use of penicillin. An injectable purified product still in the experimental stage, it will soon be marketed to the profession under the name "Neutrapen" by SchenLabs Pharmaceuticals, Inc. Clinical and laboratory trials of the product at Marquette and the University of Southern California are said to have shown that it hydrolizes and inactivates penicillin.

Iowa Academy of General Practice

NINTH ANNUAL MEETING

To the 200 members of the Iowa Academy of General Practice who attended the Ninth Annual Meeting of the organization, this review will not come as news. But to those members who were unable to be present and to many other members of the medical profession such an account should prove of considerable interest. I only wish I could reproduce the enthusiasm that was shown by the physicians who were there.

On September 22 at the Savery Hotel, in Des Moines, at the business session presided over by the Iowa Chapter president, Dr. C. A. Nicoll, of Panora, the following officers were chosen for the coming year: Dr. R. L. Knipfer, Jesup, president-elect; Dr. H. W. Mathiasen, Council Bluffs, vice-president; Dr. V. L. Schlaser, Des Moines, secretary-treasurer; Dr. Elmer M. Smith, Eagle Grove, director; Dr. C. H. Stark, Cedar Rapids, national delegate; and Dr. Eugene Smith, Waterloo, alternate delegate. In accordance with the By-Laws, Dr. Donald H. Kast, heretofore the president-elect, will assume the office of president; Dr. Nicoll becomes the immediate past-president and a member of the Board of Directors; Dr. J. H. Coddington, Humboldt, and Dr. Wm. A. Castles, Dallas Center, remain directors with terms expiring in 1958 and 1959, respectively; Dr. Ralph H. Moe, Griswold, is the other national delegate; and Dr. Floyd M. Burgeson, Des Moines, is the other alternate. Mrs. Isabelle Wandling will continue as executive secretary.

The Scientific Postgraduate Conference followed the business meeting on September 23 and 24, and it is impossible to express in words the supreme quality of the material presented. The excellence of the program undoubtedly was due to the fact that almost a year of work and effort had gone into the selection of topics and speakers that would be of interest to the general practitioner. It was certainly gratifying to the chairman and members of the Scientific Assembly Committee to see the enthusiasm with which the speakers were received. One of the best indications of this enthusiasm was that the audience remained to the last minute of the last session. One cannot say that any one speaker was outstanding, for all of them were.

Charles F. Shook, M.D., of Toledo, Ohio, a member of the Ohio Chapter of the AAGP, discussed the "Relationship of the GP to Industry." Being a GP himself and also medical director of the Owens-Illinois Glass Co., he was in a position to speak on this subject. He outlined how industrial medicine is an integral part of labor and management, and showed that it consists of more than merely the treatment of occupational injuries and illnesses.

Dr. G. deTakats, of Chicago, a member of the surgical staffs of the colleges of medicine at both Northwestern University and the University of Illinois, discussed vascular surgery and vascular disease. The ease and simplicity with which he presented his material were proof that he is a past-master in the field of vascular abnormalities. Dr. Thomas G. Ward, of Notre Dame University, discussed virus respiratory diseases. His presentation freed his hearers from the notion that virology is a mysterious and non-understandable subject. Dr. Claude R. Hitchcock, of the Department of Surgery at the University of Minnesota, Minneapolis, presented a paper on "Initial Management of Acute Injuries." His discussion was divided into three phases: first, the necessity of recognizing and managing any respiratory problem or difficulty at once; second, the care of the traumatized or injured area; and third, the management of shock and the importance of determining the requisite volume of blood or blood substitutes required in combatting shock.

Rev. Granger Westberg, a member of the faculties in both theology and medicine of the University of Chicago, explained the need for closer relationship between clergymen and physicians. It is his opinion that this effort should begin with the parish pastor and the general practitioner, because they know the patient in the setting of his total environment and are best able to evaluate these influences upon his physical and spiritual health.

Dr. Daniel J. Moos, a member of the Surgical Department of the University of Minnesota, Minneapolis, discussed "Acute Abdominal Injuries." The nature, variety and extent of these injuries, often hidden from view, must be carefully evaluated, their lethal potentialities must be recognized, and the proper therapeutic path must be followed. A careful choice of anesthesia, proper circulatory support and well chosen surgical reparative pro-

cedures are necessary to reduce the mortality of these injuries. Dr. Karl A. Lofgren, a member of the surgical staff of the Mayo Foundation, discussed the "Surgical Treatment of Varicose Veins and Stasis Ulcers." Their cause is a chronic venous insufficiency of the lower extremities, brought about by incompetency of the deep veins or incompetency of the superficial veins and perforators, or a combination of both. Only when the cause has been propely evaluated, can the correct therapeutic approach be planned. In addition to complete surgical stripping, grafting of the ulcers when needed, and support for the deep circulation, periodic follow-up examinations are essential for successful management.

Dr. E. Grey Dimond, of the Department of Internal Medicine at the University of Kansas Medical School, discussed "Evaluation of Heart Murmurs in Children." He first mentioned some of the tricks and technics frequently necessary in listening to the heart of a crying, squirming child. He stressed the physiologic changes that occur in the child's cardiac development, and spoke of how abnormal heart sounds might be produced. He noted the EKG vector force changes that frequently are found with certain organic cardiac abnormalities. Dr. Willis M. Fowler, a member of the staff in internal medicine at the State University of Iowa, discussed anemia. He stated that essentially anemia is a symptom, and the cause must be determined before proper therapy can be instituted. Through failure to seek the cause and to institute proper therapeutic measures, one can miss making an early diagnosis of some serious condition. Dr. John S. Lundy, of the Mayo Foundation, discussed "Local Anesthesia." He spoke of the great number of local anesthetic agents now available, and explained why combinations of them have in general proved unsatisfactory. He discussed sympathetic blocks, the blocking of somatic nerves, and the use of diathermy—i.e., employing an insulated needle to destroy sensory nerves and produce local anesthesia. He also discussed the medications used in stimulation, particularly to combat the effects of depressant drugs such as barbiturates.

Mr. Walter L. Stewart, a Des Moines attorney, discussed "Wills, Taxes and Money" at a noon luncheon. His talk was most interesting and well-received.

Dr. W. C. Keettel, of the S.U.I. Department of Obstetrics & Gynecology, discussed "Forceps Delivery." He enumerated the indications and contraindications for the procedure, and took up the evaluation of these factors. The last session on the scientific program was a panel discussion of obstetrical problems, and it was followed by a question-and-answer period. Both proved very interesting.

The technical and scientific exhibits were visited by the members during intermissions. A reception and banquet were held on the evening of September 23, and they were all attended and enjoyed. At the conclusion of the banquet, Dr. Kast, the new chapter president, was installed.

All officers, members and other participants in the meeting were very happy over the success of the sessions.

CLEFT LIP AND PALATE STUDY AT S.U.I.

Seven departments or services scattered among the colleges of Liberal Arts, Medicine and Dentistry at the State University of Iowa are cooperating in a study of patients with cleft lips and palates, and the U.S.P.H.S. has put up $63,888 to finance the work. The study is aimed at developing a mass of information about problems—social as well as dental and medical—that beset such individuals, who are known to include one in every 800 who are born alive.

The S.U.I. study will cover at least 150 children, ranging from infancy to 16 years of age, who have one or both of the cleft conditions. The physicians and dentists, of course, perform the repairs that are indicated, and speech therapists give the patients special instruction to enable them to speak normally. But a part of the study involves work with the children's parents. Interviewers ask them up to 1,300 questions about themselves and their children in an effort to find ways in which they may be helped to adjust to the youngsters' disabilities.

About 95 per cent of the parents who have been questioned thus far have said that they are pleased with the results of surgery, but about 20 per cent of them said they were considerably concerned about the teasing and other unpleasant experiences to which the residual deformity would expose their youngsters.

GP REVIEW COURSE IN DENVER

The University of Colorado College of Medicine will offer a general practice review course of six full days January 13-18, 1958, at Denver. Each day will be devoted to a different area of practice: Monday—medicine; Tuesday—pediatrics; Wednesday—surgery; Thursday—laboratory medicine and radiology; Friday—obstetrics and gynecology; and Saturday—trauma.

The detailed program and further information can be secured from the Office of Postgraduate Medical Education, 4200 East Ninth Avenue, Denver 20. Physicians are warned to make hotel reservations well in advance, for the National Western Stock Show is to be held in Denver during the same week.

TUMOR CONFERENCE AT IOWA CITY

At the S.U.I. Medical Amphitheatre in Iowa City on December 11 and 12, the College of Medicine and the Iowa Division of the American Cancer Society will present a Postgraduate Tumor Conference featuring several S.U.I. faculty members and four guest speakers.

The visiting lecturers will be Dr. James W. J. Carpenter, professor of radiology at the University of Chicago; Dr. Herbert E. Schmitz, professor and chairman of the Department of Obstetrics & Gynecology at Loyola University and professor of gynecology at the Cook County Graduate School of Medicine; Dr. William D. Holden, professor and director of the Department of Surgery at Western Reserve University; and Dr. Louis T. Palumbo, chief of surgery at the Des Moines V-A Hospital.

The Iowa Academy of General Practice will allow its members 12 hours of credit for their attendance at the conference.

The registration fee is $15, and advance payment is requested. Checks should be drawn to the Director of Postgraduate Medical Studies, S.U.I. College of Medicine.

PROGRAM

Wednesday, December 11

9:30 DRY CLINIC: Cancer metastases—vertebral venous system; irregular vaginal bleeding at menopause; gastric ulcer adjacent to esophagus; patient with a nasal pharyngeal mass; prostatic cancer, etc.

11:30 OPEN FORUM: Continuation of discussion; presentation of problem cases by visiting physicians

1:00 "The Aggressive Treatment of Colonic Adenomatous Polypi"—Dr. W. D. Holden

1:30 "The Management of the Pregnant Patient With an Associated Uterine Cervical Cancer"—Dr. H. E. Schmitz

2:00 "The Use of Supervoltage Therapy in the Treatment of Intrathoracic Cancer"—Dr. J. W. Carpenter

2:40 "Radical Amputation of the Extremities for Cancer"—Dr. L. T. Palumbo

3:10 "The Injured Ureter—Its Management"—Dr. D. A. Culp

4:00 MEDICAL-SURGICAL CONFERENCE: Cancer of the cervix—management of various stages of the disease. (Closed-circuit television to Room E-405).—Dr. S. E. Ziffren, moderator, and Drs. W. C. Keettel, H. B. Elkins, H. E. Schmitz and J. W. Carpenter.

Thursday, December 12

9:00 "The Resection of Intrapulmonary Metastases—Its Role in Therapy"—Dr. J. L. Ehrenhaft

9:30 "The Diagnostic Use of Supraclavicular Scaline Fat Pad Biopsy"—Dr. S. H. Walker

10:00 "Analysis of 100 Neck Dissections for Metastatic Cancer"—Dr. G. Obregon

10:45 "The Value of Supervoltage Radiation Therapy in Metastatic Disease"—Dr. Carpenter

11:15 "Management of Pain in the Patient With Advanced Visceral Cancer"—Dr. G. E. Perret

1:00 THYROID CLINIC: Representative patient presentation—solitary nodule cancer; juvenile patient; thyroiditis; etc.—The Thyroid Clinic group, including Drs. E. L. DeGowin, J. A. Buckwalter, E. E. Mason, H. B. Elkins, T. C. Evans, H. E. Hamilton and R. E. Hodges.

2:30 "Physiologic Alterations in the Patient Undergoing Surgical Cancer Therapy"—Dr. Holden

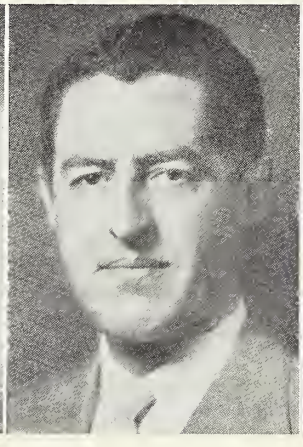
3:00 "Mechanism of Anemia in the Cancer Patient"—Dr. R. F. Sheets

3:45 MOVIE: "Ovarian Tumors"—Prepared and narrated by Dr. Schmitz

GUEST SPEAKERS FOR TUMOR CLINIC IN IOWA CITY



W. D. Holden, M.D.



J. W. J. Carpenter, M.D.



Herbert Schmitz, M.D.



Louis T. Palumbo, M.D.

MENTAL ILLNESS

MOTHERS AND INFANTS

Several of the speakers at the annual meeting of the Academy of Psychosomatic Medicine, in Chicago last month, concerned themselves with problems that the obstetrician faces.

Three of them pointed out the need for the physician's dispelling fears implanted in the expectant mother by her friends. Dr. Howard P. Taylor, of Cleveland, declared that nausea and vomiting should be recognized and treated as a complication, rather than a natural accompaniment of pregnancy. Everyone enters enthusiastically into an unconscious plot to make the mother-to-be miserable. Friends, relatives and even some unwary doctors, he said, encourage her to develop the classic symptoms as quickly as possible so that she can feel truly pregnant and match the misery described by her veteran predecessors.

There is good reason for believing, he declared, that emotions may be the prime factor in nausea and vomiting. Although about 60 per cent of pregnant women experience these symptoms, 80 per cent of that number are no more than mildly troubled and less than one per cent develop hyperemesis gravidarum with pernicious and intractable vomiting. Those who show mild symptoms or none at all are invariably the more emotionally stable individuals. The emotional theory is bolstered by the fact that nausea and vomiting reaches its peak in Western society where girls are conditioned to believe childbirth is agonizing and fear is prevalent. Unwed mothers have the highest incidence of distress. The cure for all this, he said, lies in education. From infancy on, the girl must be surrounded by healthy family attitudes toward maternity.

Dr. Grantly Dick-Read, famous as the author of CHILDBIRTH WITHOUT FEAR (1944) said his revolutionary concepts of "natural childbirth" have now been adopted by doctors all over the civilized world. Dr. Read tells his patients altogether calmly about every natural and unnatural state that occurs in their pregnancies, and as a result, he says, they face labor with equanimity and even anticipation. The combination of relaxation, exercises and a thorough knowledge of their role in the approaching venture conditions their minds and bodies to a comparatively painless delivery. They also are happy during pregnancy.

Both Dr. Read and Dr. Alfred J. Kobak, associate clinical professor of obstetrics and gynecology at the University of Illinois, argued at length for a minimum of anesthesia during delivery. Dr. Read said, "Despite much talk to the contrary, women still wish to experience to the full those things which women for generations have done before them." Dr. Kobak declared that research indicates nature never intended women to suffer unduly in bearing children and that civilization is responsible for painful labor.

"Local anesthesia," Dr. Kobak pointed out, "effectively relieves pain during the first and second stages of labor with none of the complications associated with general anesthesia. It does not interfere with uterine contractions, and the patient can cooperate in speeding delivery." Additionally, he said, local anesthesia eliminates asphyxia in the fetus, a common cause of infant mortality when drugs have been used promiscuously, and there are no ill effects on the liver, heart or lungs.

Convincing women that local anesthesia will prevent pain is easy, Dr. Kobak believes, if frequent reassurances are given prenatally. Echoing Dr. Read, he concluded, "Most important of all to the mother is the fact that she is awake when her child is born."

Dr. J. C. Moloney, assistant professor of psychiatry at Wayne University, told his audience that the "humanness" of breast feeding reduces the dangers inherent in our culture's systematized methods of infant care. But he gave special emphasis to the point that infant feeding, whether breast or bottle, must be unhurried.

Leaving the baby instantly after giving it needed attention is all too common, Dr. Moloney said, and the situation is made worse when bottle feeding is employed. Bottle holders and bottle proppers are still used by many mothers so that they may need to spend no more than a bare minimum of time with their infants. Some of them, he said, minister to their children from a sense of duty, from a fear of criticism or from a desire for silence so that they may indulge their own fantasies. "A tender, loving recognition of the infant's needs should be the first concern of the mother. Breast feeding by a gentle, permissive, loving, emotionally mature woman provides the soundest foundation for the healthy development of the infant's personality," he concluded.

DECEMBER MEDICAL CONFERENCE IN NASSAU

The Fourth Bahamas Medical Conference will be held at the Fort Montagu Beach Hotel, in Nassau, Bahamas, December 1-15, 1957. The registration fee is $75, and programs can be secured from Dr. B. L. Frank, 1290 Pine Avenue West, Montreal. Reservations should be made by writing direct to the Hotel, and transportation should be arranged through the airlines or travel agencies.

STATE DEPARTMENT OF HEALTH

Edward G. Zimmer
COMMISSIONER

MORBIDITY REPORT FOR MONTH OF SEPTEMBER

Diseases	1957 Sept.	1957 Aug.	1956 Sept.	Most Cases Reported From These Counties
Diphtheria	0	1	0	
Scarlet fever	52	45	23	Johnson, Polk
Typhoid fever	2	6	0	Bremer, Fayette
Smallpox	0	0	0	
Measles	24	135	51	Dubuque
Whooping Cough	21	14	35	Des Moines
Brucellosis	12	7	16	One to a county
Chickenpox	29	27	30	Boone, Clay
Meningococcus Meningitis	0	1	3	
Mumps	69	85	50	Dubuque
Poliomyelitis	32	26	248	Harrison, Woodbury
Infectious Hepatitis	7	20	22	Polk
Rabies in Animals	11	20	12	Johnson, Polk, Van Buren
Malaria	1	0	2	Mills
Psittacosis	0	1	1	
Q fever	0	0	0	
Tuberculosis	16	46	24	For the state
Syphilis	103	127	64	For the state
Gonorrhea	69	51	48	For the state
Histiplasmosis	0	0	1	
Food Intoxication	17	0	0	Polk
Meningitis (type unspecified)	11	3	7	One to a county
Diphtheria Carrier	0	0	1	
Aseptic Meningitis	4	16	3	Cerro Cordo, Humboldt, Pocahontas, Polk
Salmonellosis	4	8	2	Polk
Tetanus	1	0	2	Harrison
Chancroid	0	0	1	
Encephalitis (type unspecified)	0	8	5	
Influenzal Meningitis	0	1	2	
Amebiasis	1	0	1	Dubuque
Shigellosis	3	1	0	Polk

THE DECLINING INCIDENCE OF PARALYTIC POLIOMYELITIS

The chart at the top of the next page shows the distribution of paralytic poliomyelitis cases in Iowa by age groups for 1954, the last year in which the disease was not influenced to any noticeable extent by the use of vaccine. In the chart beneath it, the incidences of the paralytic form of the disease in Iowa for 1955 and 1956 are shown.

In comparing the two charts, the reader should note that the scales on the vertical axes are considerably different, one from the other. Indeed, if the 1955 and 1956 cases had been plotted on the same graph with the 1954 cases, they would have occupied no more than the bottom three-eighths of the figure.

In 1954, 1,445 cases of poliomyelitis were reported to the Iowa State Department of Health (538 paralytic cases of known age, 694 nonparalytic and 213 unspecified). The 1954 chart is based on the 538 cases of paralytic poliomyelitis in patients of known ages. Although our first injections of the vaccine were given in the spring of that year (1954), they were comparatively few. In Linn, Scott and Woodbury Counties, 13,000 children in grades 1, 2 and 3 received injections, but one-half of them, for control-study purposes, received injections of a placebo.

The flatness of the 1954 curve for the ages 0-14 years differs somewhat from the curve for the nation. Several northern states for many years have had higher age attack averages than many southern states have shown. The 1954 paralytic cases by age groups were as follows:

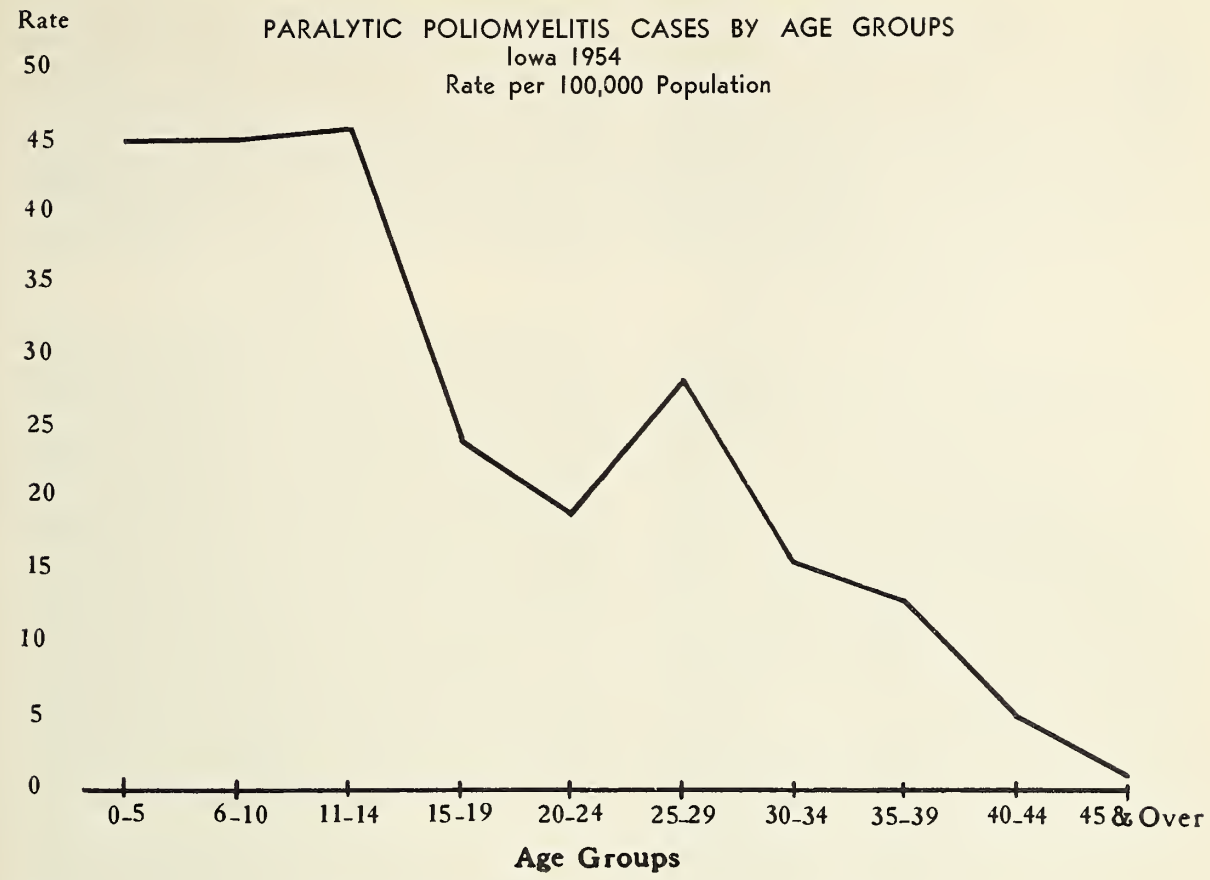
PARALYTIC POLIOMYELITIS CASES IN IOWA 1954

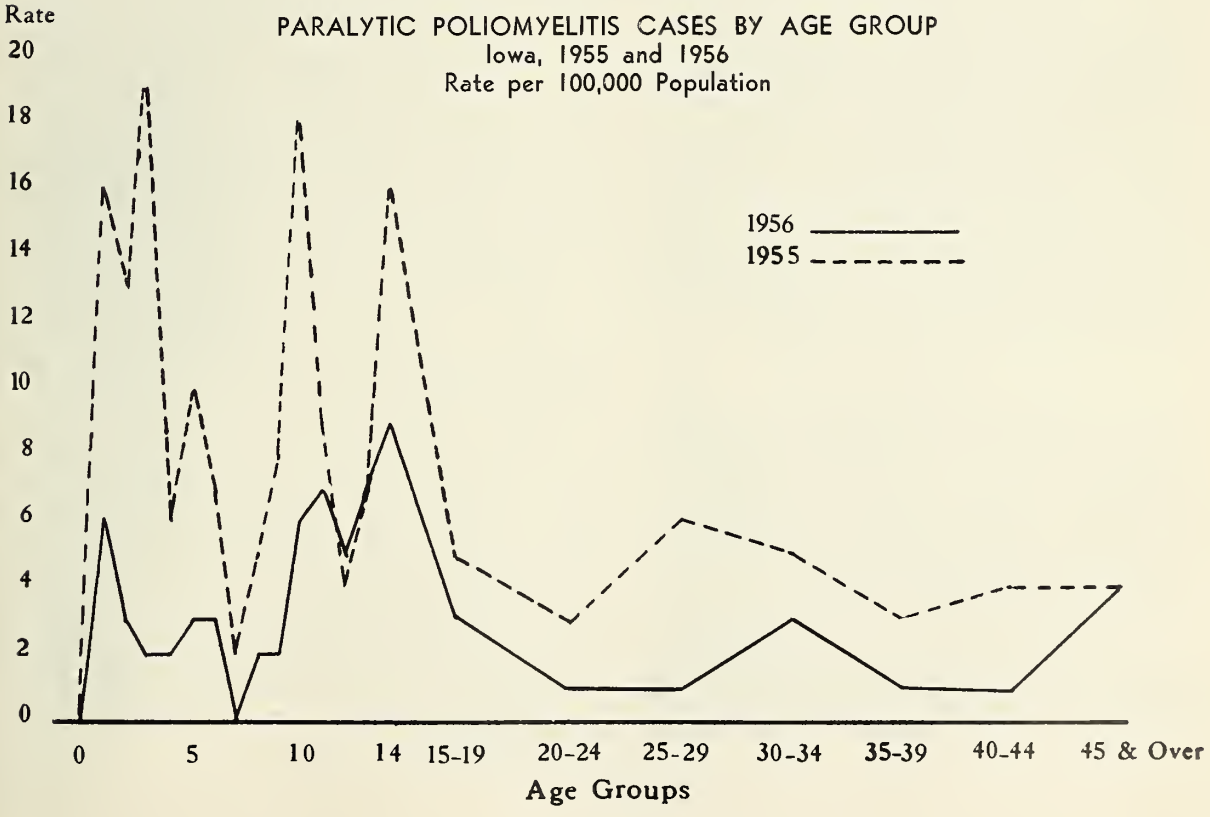
Age Group	Number of Cases
0-5 years	152
6-10	104
11-14	74
15-19	46
20-24	36
25-29	55
30-34	30
35-39	23
40-44	8
45 and over	10
	538

During 1957, only seven paralytic cases had been reported to the Iowa State Department of Health through September 14.

1957 PARALYTIC POLIOMYELITIS CASES IN IOWA (THROUGH SEPTEMPER 14)

County	Date of Onset	Age	Sex	Number of Injections	Date of Last Injection
Benton	7-2-'57	10	F	0	
Buchanan	4-12-'57	28	M	1	Sept. or Nov., '56
Delaware	7-18-'57	22	F	0	
Guthrie	5-7-'57	18	F	0	
Harrison	8-15-'57	13	M	0	
Harrison	9-3-'57	13	M	0	
Webster	8-26-'57	5	M	3	March, '57


Rate
PARALYTIC POLIOMYELITIS CASES BY AGE GROUPS
Iowa 1954
Rate per 100,000 Population
50
45
40
35
30
25
20
15
10
5
0
0-5
6-10
11-14
15-19
20-24
25-29
30-34
35-39
40-44
45 & Over
Age Groups


Rate
PARALYTIC POLIOMYELITIS CASES BY AGE GROUP
Iowa, 1955 and 1956
Rate per 100,000 Population
20
18
16
14
12
10
8
6
4
2
0
1956
1955
0
5
10
14
15-19
20-24
25-29
30-34
35-39
40-44
45 & Over
Age Groups

ASIAN INFLUENZA

In April of this year, there arose in China a flu epidemic that attracted the attention of health authorities because of its high attack rate. Material containing the virus was sent to the United States, where it was identified as a variant strain of one of the recognized groups of flu viruses, differing only in its immunologic reaction. That is, the vaccine which protected against the previously known flu was ineffective against the new strain.

SYMPTOMS

Because we had never come into contact with this new strain (now called "Asian"), we had little immunity to it. Hence, the attack rate is high—maybe 20 to 30 per cent of the population. Except for this, Asian flu is like any other. The symptomatology and treatment of the new and the old diseases are identical. Health authorities are concerned not because the disease is more serious or because there is any likelihood that more people may die as a result of it, but because large numbers of people may be taken ill at one time, with a consequent disruption of essential services and normal community life.

Actually, it cannot be determined from the symptoms whether a particular case is the Asian or some other type of flu, nor is it important. The recognition of the causative virus requires complex, time-consuming laboratory procedures that are practical only in identifying the epidemic, and not in treating the individual case. The patient would be well before the requisite tests were completed.

Asian flu, like all other varieties, attacks principally young and middle-aged people. It may be suspected, particularly during an explosive type of epidemic, from the occurrence of characteristic but by no means specific symptoms: fever (101 to 104°F.), chills, sweats, headache, sore throat, rhinitis, bronchitis, malaise and aching muscles. The onset is sudden. It is self-limiting, and the patient is usually well in three to five days, though weakness may persist a few days longer.

TREATMENT

The treatment is symptomatic. The patient should remain in bed. Medication is necessary only to allay the discomfort and cough. Antibiotics are of no value in the treatment of uncomplicated cases. Warm clothing, avoidance of drafts, simple diet, vitamin supplementation and avoidance of visitors are other treatment measures.

The uncomplicated case is best treated at home, not only because in the face of an epidemic, hospital beds are needed for those cases with complications but because the risk of a complicating bacterial infection may be greater at such times in a hospital.

The risk of serious complications is greatest in those who are debilitated by reason of age or illness, such as heart disease, tuberculosis, etc. Such persons, if at all possible, should be protected by vaccine. Complications are usually caused by superimposed bacterial infection by Pneumococci, Streptococci or Staphylococci. Such complications, when present, are more easily combatted than formerly, by reason of our having modern drugs and antibiotics.

PROTECTION

The manufacture of a protective vaccine was undertaken by six leading pharmaceutical firms almost as soon as the virus was identified, but it is necessarily still in short supply. We can only hope to have enough vaccine to immunize about one-third of our population before the first of the year. Distribution is through the usual commercial channels to druggists and doctors. The State Department of Health does not supply or have anything else to do with the vaccine and its distribution. By agreement with the manufacturers it has been arranged that 1.6 per cent of all vaccine produced is to be made available for purchase by physicians in Iowa. This allocation is on the basis of the population of the state. The vaccine is about 75 per cent effective. It should not be given to persons with known sensitivity to egg protein.

PRIORITIES

Because of the scarcity of the vaccine, Governor Loveless has appointed a committee to advise and assist the State Department of Health in preparing for the anticipated epidemic. No one can predict when it may occur, or whether it will affect scattered communities or prevail state-wide. It probably will occur during the fall and winter.

One of the first acts of the committee was to recommend to physicians that in the administration of the vaccine they should give priority to the following groups:

1. Those persons whose services are necessary to maintain the health of a community
2. Those persons with tuberculosis, and others who, in the opinion of the physician, constitute a special medical risk
3. Those persons necessary to maintain basic community services.

Some communities desire to spell out the particular occupational groups deemed essential, but since essentiality *in an emergency* varies from place to place, it was deemed impractical to do so on a state-wide basis. This determination in any case rests with the physician.

The vaccination of the entire school population is not generally to be recommended. Persons, especially those who consider themselves included in one of the priority groups mentioned, should consult their physician.

Woman's Auxiliary News

OUR PRESIDENT SAYS—

Let's give a little more thought to our standard as presented by Mrs. Paul Craig, our national president: "Health is a joint endeavor." How many of us who enjoy good physical and mental health really appreciate it? How much are we doing to promote it, to help those who through no fault of their own have been deprived of it? As physicians' wives, we surely should recognize its importance more than others. Let's work toward making our communities realize it too, by seeing that we have adequate facilities to help those who need help.

Tremendous strides are being made in mental health, yet how woefully inadequate are our facilities! Consider the plight of disturbed or retarded children. Because of lack of understanding their problems and lack of diagnostic and treatment centers, they face impossible futures in our state. Either they are compelled to compete with normal youngsters in school, in social life and in employment, or they are placed in overcrowded, understaffed institutions where basically they merely exist. Are we doing anything to help them?

Each community has different needs. As physicians' wives, we assume a personal responsibility to undertake constructive work in our communities. Public service means good public relations for our husbands. Some of you may have only social meetings and feel your efforts are inadequate, yet much can be accomplished over a cup of coffee, so don't be discouraged.

Any organization is only as valuable as the work its members do. It's up to each of us to make ours worthwhile. Remember, "Health is a joint endeavor." Let's be sure that we are doing our share!

I have been busy this fall attending meetings and have thoroughly enjoyed every one of them. In September I was in Rock Valley for a Third District meeting, in Spencer for a Clay County meeting, and in Clarinda for an Eleventh District meeting. Then in October, I attended a Fourth District meeting in Sioux City. It is most gratifying to meet with you and to see the interest you are showing in the Auxiliary.

SUE GERKEN
President

IN MEMORIAM

The members of the Woman's Auxiliary to the Iowa State Medical Society were saddened to hear of the death of Dr. A. Staudt, of Waterloo.

CIVIL DEFENSE

Civil Defense is every American's concern. President Eisenhower, speaking at the opening of National Civil Defense Week, said, "We cannot permit weakness in either military or civil defense to tempt a reckless aggressor." He urges the nation to "be impressed with the truth that Civil Defense is as important to our national welfare as is military defense." He states, "Total readiness is the greatest deterrent to any aggression in the uncertain times that must endure until we can turn our atomic effort exclusively to the welfare of mankind."

As an Auxiliary member, wife and mother, ARE YOU DOING YOUR PART?

COUNTY AUXILIARIES

Black Hawk

The Woman's Auxiliary to the Black Hawk County Medical Society met for dinner at the home of its president, Mrs. Carl Hanson, on Tuesday, September 17. An original program entitled "Getting to Know You," under the direction of Mrs. R. F. Nielsen, was a huge success. It was a variation of Bingo, and served as an excellent mixer.

Plans for the state Future Nurses conference to be held in Waterloo on November 8 were discussed. The meeting, which is to be held in Dak Hall at the Allen Memorial Hospital, will be the first outside of Des Moines, and is expected to attract 125-250 girls, according to Mrs. F. H. Entz, state chairman of Careers, who is in charge of arrangements. Plans call for a tour of all Waterloo hospitals as a part of the event.

Three new members were present at the meeting, Mrs. Merwin Dieckmann, Mrs. Richard D. Richards and Mrs. Walter Anglin.

Clay

The State Auxiliary president, Mrs. Sue Gerken, was present at the regular fall meeting of the Clay County Auxiliary held at the home of its president, Mrs. C. C. Jones, on the morning of September 4. Brunch was served by the hostess, and the business of the day was the setting up of the booth for the sale of handicapped crafts at the Clay County Fair, and exhibits and projects sponsored by the Clay County women in the Health Building.

This was Sue's initiation into the activities of a small Auxiliary. Clay has eight members. One was ill and several others were unable to be present because of a lack of baby-sitters.

Mrs. E. E. Munger and the group made final plans for a week's handicapped crafts sale at the Fair, and allotted time to workers from all of the Auxiliaries in District Three. The health booth sponsored TODAY'S HEALTH, and featured careers recruitment, showing two health-career films and 11 safety films concerning farm, home and traffic safety. Statistical reports will be available shortly.

Clinton

The first fall meeting of the Woman's Auxiliary to the Clinton County Medical Society was held on Tuesday evening, September 17, at the home of Mrs. Leonard Nelken, in Clinton. The members attending were served dessert.

Principal discussion concerned the annual Charity Ball to be given in December at the Clinton Country Club. A dinner was planned for October 15, at which further plans for the Ball were to be formulated.

Dallas-Guthrie

The Dallas-Guthrie Medical Society and its Auxiliary met at the Presbyterian Fellowship Hall, in Panora, on September 19. The group enjoyed a delightful luncheon, and afterwards the ladies held a business meeting. Committee reports were given by the chairmen. Following the business meeting, the group engaged in an informal discussion of the summer's activities.

AMEF Note Paper and Envelopes

$1.00 for a pack of 10 each

Order from Mrs. Robert Updegraff
630 Foster Drive
Des Moines 12, Iowa

Proceeds will be donated to the American Medical Education Fund

Marshall

Mr. Russell Brown, of Des Moines, state safety commissioner, spoke to the Woman's Auxiliary to the Marshall County Medical Society on October 1, at Stone's, in Marshalltown. Speaking on the problem of traffic safety, he said that police, safety officials and the law courts must have public support in order to carry out measures designed to control mounting traffic fatalities. He also suggested projects for local service groups and women's clubs.

Mrs. Robert Sokol, safety chairman of the State Auxiliary and a member of the Women's Commission on Public Safety, announced the results of a slogan contest. It had been won by Mrs. Edwin Marble with the slogan "To Be Sorry Is Too Late—Drive Carefully!"

Mrs. Harold Sauer and Mrs. Dale Harris showed the film "Alias the Killer," and Mrs. Willard Marble, the presiding officer, introduced a new Auxiliary member, Mrs. Donald Reading, of Marshalltown.

Page

The Woman's Auxiliary to the Page County Medical Society entertained the doctors' wives who accompanied their husbands to the Sixth Annual Fall Program of the Society at the Clarinda Country Club on Wednesday, September 18.

The Auxiliary was honored to have as its guests Mrs. J. F. Gerken, of Waterloo, president of the State Auxiliary, and Mrs. J. C. Nicoll, of Panora, wife of the president of the Iowa Academy of General Practice.

Following the social hour and dinner with the doctors, the Auxiliary members and their out-of-town guests met at the home of Dr. and Mrs. H. S. Frenkel.

Pocahontas

The newest of the county Auxiliaries, Pocahontas, was organized in August, with Mrs. H. L. Pitluck, president, and Mrs. James Gannon, secretary-treasurer, both of whom live in Laurens. The whole of the State Auxiliary is proud to welcome this latest addition to its ranks.

Polk

Des Moines doctors and their wives enjoyed their annual fall dinner dance at the Fort Des Moines Hotel on September 21. The committee chairmen included Dr. and Mrs. M. J. Rotkow, Dr. and Mrs. John Bakody, and Dr. and Mrs. Ralph Dorner. Ralph Zarnow's orchestra played.

The Woman's Auxiliary to the Polk County Medical Society met for luncheon on October 11 at the Wakonda Club. Ralph Scroggs, director of safety services for the Polk County Red Cross spoke on "Don't Be Half Safe." Hostesses for the meeting were Mmes. Charles Latchem, John Sullivan and H. Kirby Shiffler.

Wapello

The Auxiliary to the Wapello County Medical Society had a dinner meeting at the Cornpicker Hotel, in Ottumwa, on September 3. Twenty-six members were present.

There were no committee reports, and the meeting was taken up with a discussion of means for raising money for the student loan fund. Several ideas were presented, and they will be given further consideration at the next meeting.

It was announced that the October meeting will be a dinner affair at the Country Club, and that members' husbands will attend it.

TRAFFIC SAFETY

Mrs. Ralph E. Hines, of Des Moines, co-chairman of Safety, attended a National Safety Meeting called by the President's Committee for Traffic Safety, October 2-4, at Northwestern University, Evanston, Illinois. You will be interested in hearing from her about that conference, probably in the December issue of the WOMAN'S AUXILIARY NEWS.

MENTAL HEALTH COMMITTEE

The Mental Health Committee of the Iowa State Medical Society is making a realistic effort to improve mental health in this state. As doctors' wives, Auxiliary members must cooperate with their husbands in achieving this goal.

Besides supporting their endeavors, all of us must do all we can at all times to help those who look to us for guidance and leadership in mental health work.

We must provide for those who are afflicted, and even more, we must guide the citizens of tomorrow. The Auxiliary has made available "Milestones to Marriage," which is an excellent preventive technic in the safeguarding of mental health. Every senior high school student in Iowa should have access to it before the end of the 1957-1958 school year. Has your Auxiliary introduced it to the schools of your county?

"Milestones to Marriage" (nine pamphlets per set) is distributed by Mrs. Hazel Lammey, at the ISMS headquarters, 529 36th Street, Des Moines 12. You need not supply one set for each student; even one set per school will help, for it can be made available in the school library. Perhaps a teacher can be interested in presenting it, and can request special oral reports on the series from nine of her students, one for each pamphlet. Auxiliary members who are familiar with "Milestones to Marriage" know how fascinating the series is.

Order your copies today, but please be conservative, for the supply is limited.

THE CHATTER BOX

Seems like everyone is trekking to Iowa City for the football games these days. We're looking forward to the Iowa-Minnesota game. It should be a honey!

* * *

Among the lucky families in Fort Dodge who spent summer vacations at Lake Okoboji and Spirit Lake were the **Dan Egberts, Walt Fieslers, Frank Larsens, Bob Lees** and **L. O'Briens. Roger and Ethyl Drown** spent some time at the lakes, as did the **Matt Sanders, Norman Schachts** and **Eric Swansons.** The Minnesota lakes lured the following families: the **Charles Bakers, Herb Kerstens, Ted Michelfelders, Paul Stitts, W. Thatchers, Don Tylers** and **Joe Meyers.**

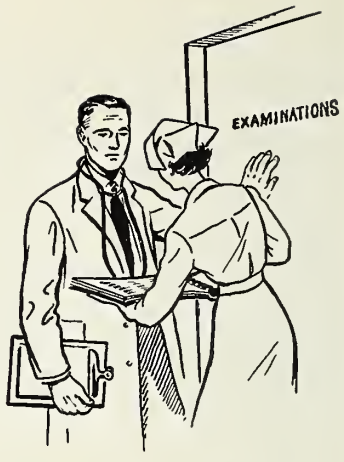
* * *

The **Kirby Shifflers** have returned to Des Moines after touring Europe and visiting friends in Paris.

WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

President—Mrs. J. F. Gerken, Waterloo
President-Elect—Mrs. H. C. Merillat, 2800 Woodland Avenue, Des Moines 12
Secretary—Mrs. Wm. C. Shinkle, 907-49th St., Des Moines
Treasurer—Mrs. E. A. Vorisek, 6205 Woodland Rd., Des Moines 12
Editor of THE NEWS—Mrs. E. T. Burke, 601 S.W. 42nd Street, Des Moines 12
Asst. Editor of THE NEWS—Mrs. D. F. Crowley, Jr., 663 44th Street, Des Moines 12

THE DOCTOR'S BUSINESS



Reducing Income Taxes For Your Beneficiaries

HOWARD D. BAKER

WATERLOO

Three major factors determine spendable income that will be available to the beneficiaries of an estate. They are (1) the amount of property involved; (2) the amount of net income that the property will produce; and (3) the amount of income tax that will be payable on that income.

Most individuals are aware that the federal government levies high estate taxes if the value of the property bequeathed exceeds the allowable exemptions. But they are likely to forget that the income taxes that the beneficiaries may be required to pay can considerably interfere with the realization of plans that have been made for their welfare. Indeed, minimizing future income taxes may be more important than reducing estate taxes.

We all recognize that income taxes will be reduced if any given amount of income is divided among two or more persons. Therefore, splitting income under a will can result in a lower tax. For example, if provision has been made for the division of income among the wife and children, it is often possible to effect an attractive tax saving and thereby increase the family's spendable income.

Let us say that Dr. X has a wife and two children, for whom he has accumulated an estate capable of earning an annual income of $12,000. Now if, following his death, that entire sum were paid to Mrs. X, her annual federal income tax would be about $2,370. But if, on the other hand, it were practical to arrange for $1,000 from that annual income to be paid to each of the two children outright, and for $750 per child per year to accumulate in a trust, then Mrs. X's income would be reduced to $8,500. Her federal income tax would then be $1,450, each child would pay $62, and the trusts would pay $130 per child. The annual tax saving would be $536.

In most cases, the principal objective of the husband's will is to provide maximum protection for the wife. However, if an estate is apt to produce more income than the wife will need, it is logical that the surplus income be removed from her top tax bracket and taxed to other beneficiaries in the lower brackets.

TAX SAVINGS THROUGH THE USE OF PRINCIPAL

In some specific cases, a planned use of principal can save income taxes. Let us suppose that the anticipated annual income from Dr. A's estate is $40,000. In the event of his death, he would like his wife to have the benefit of the entire income, but would also like to minimize her income tax burden. In his will he has divided his estate into two equal parts, leaving one of them in trust for his wife and the other divided into separate trusts for his children. The income ($20,000) from Mrs. A's trust is to be paid to her. The same amount of income it to accumulate in separate trusts for the minor children. However, in order to offset the economic loss to Mrs. A from having half of the income accumulate for her children, the will provides that she may withdraw a specified sum from the principal of her trust each year, and the trustee is given discretionary power to pay additional principal to her in the event of need.

Under this arrangement, Mrs. A will be taxed on only $20,000 of the trust income, instead of $40,000, and since she has the right to use parts of the principal, which are not subject to tax, she can have the same amount for her living expenses each year as she would have had if her husband had left her the right to the entire income. She might, in fact, have even more to spend.

The net effect of this plan is that although the wife's trust will shrink, the trust for the children will grow. In the end, therefore, there may be more capital for the ultimate welfare of the entire family.

As is the case with other estate matters, action should be taken only after a thorough study of the purposes which the estate is to accomplish, and only under the guidance of an attorney.

The principle which should be remembered is that net spendable income is much more important than is gross income before income taxes.

The Physician, the Press and the Public

WILLIAM D. SEVERIN

WATERLOO

In northeastern Iowa, where my paper circulates in 15 counties, I am regarded as a crusading reporter, and I think all of you will agree that crusading reporters are the very worst kind. I am inclined to be critical—though by no means unsympathetically so—and knowing that the physicians who made this forum available to me are aware of the fact, I shall undertake to point out some of the errors of commission and omission which it seems to me that they and their colleagues have made.

As I recall, the first time that I undertook to speak bluntly to my friends in the medical profession was several years ago when I was still a police reporter. At that time, the Waterloo police were having trouble in getting doctors to respond to emergency calls. They frequently had to make as many as 15 telephone calls before finding a doctor ready and willing to go.

Now whether or not this delay was harmful to the accident victim is a medical question that I am not going to attempt to answer. I do know that it was harmful to the standing of the medical profession in the community. It was bad public relations.

I told my doctor friends so, in rather colorful language, I am afraid. Their reaction was one which I hadn't anticipated. They agreed with me, and furthermore they did something to remedy the situation. A few days later, the police dispatcher was provided with a card index containing the names of about 20 doctors. He was told to call those medical men in rotation whenever an emergency arose. The doctors thus benefited themselves, the police department and the community.

DOCTORS SHOULD INVITE SUGGESTIONS

Some of you may not realize it, but when the "little people" of your community or mine become upset about a real or fancied injustice and can't think of anyone to complain to, they call the newspaper office. When these calls have concerned the medical profession, I have taken great delight in passing the complaints on to my medical friends. Sometimes the doctors got a little sore, and I must admit that many of the complaints seemed quite petty to me.

Right here, I should like to interject that when anyone has a complaint, he shouldn't take it to the newspaper office or impart it to his favorite bartender, but on the other hand he shouldn't be left in any doubt about the place where he should take it. I learned only the other day that the State Medical Society has a very fine grievance committee. But that fact is one of the doctors' best-kept secrets. Why not publicize this committee, and let people take their complaints to the proper place?

Better yet, why not organize public relations—or grievance—committees at the local or county level? Get them down close to the people. A lot of problems could be solved right there without bothering your state committee.

But it has been gratifying to me to see that whenever a bad situation has been called to the attention of the doctors in my community, they have moved quickly to correct it.

Many of the complaints made against the medical profession may seem petty or of no great importance to you busy doctors. But frequently the seemingly small, relatively unimportant things can assume major importance when viewed in the light of public reaction. And believe me, public reaction in these days of big business and big labor is important to all of us who believe in and wish to perpetuate our free enterprise system.

PUT PUBLIC RELATIONS TO WORK AT THE INDIVIDUAL LEVEL

Those of us who believe in the private practices of medicine, and in the production and distribution of electric power, steel and other goods and services by privately financed, tax paying individuals or corporations must be concerned about the public relations aspects of our businesses or professions. We must conduct our business or professional affairs in a manner that will convince people of the rightness of our point of view. By the way in which we do things we must show them that private enterprise can do a better job than could a vast, sprawling, bureaucratic government.

This is the function of a public relations program. I understand that your profession, both at the state and at the national level, has been doing a good deal of work and research on this problem. But let me quote a statement by Paul Garrett, vice-president and director of public relations for the General Motors Corporation. Mr. Garrett has said, "A good public relations policy means little if nothing is done about it. What counts is how the policy is put into effect at the point of public contact."

In the medical profession, you gentlemen are the point of public contact. The success or failure of

Mr. Severin is a reporter on politics and government for the WATERLOO DAILY COURIER.

any public relations program depends almost entirely upon you.

With this in mind, you doctors might do well to take time, at your city and county medical meetings, to ask yourselves a few questions. For a starter, try these:

Are we fulfilling our professional responsibility to this community in the best possible manner?

Have we effective liaisons with the police department, fire department and sheriff's office so that we may provide swift medical aid when emergencies occur?

Have we a good, ethical working agreement with the mass public information media in the community—the newspapers, and radio and television stations?

These are but a few. You can think of many others.

LIKE-MINDED PEOPLE SHOULD JOIN HANDS

Turning to socialized medicine for a minute, I should like to point out that it is time for us to straighten out our thinking on this question of government control, regulation and ownership of business.

Let me give you the results of a public opinion survey taken last year which bears directly on this question. The contractors and builders who were questioned condemned public housing without exception. They claimed that the government had no business getting into the building trades in competition with them. But a large percentage of the builders thought that the medical profession ought to be regulated—that socialized medicine would be a good thing. Among the medical men who were questioned, there was not one voice in support of socialized medicine, but 50 per cent of those medical men felt that public housing was a good thing. Only a few doctors could see anything wrong with government encroachment upon the power industry.

Surely it cannot be that socialized medicine is good for everyone but doctors; public housing good for everyone but builders; public power good for everyone but the stockholders in private power companies. On the contrary, if government ownership or control could harm anyone, then it is potentially dangerous for all of us.

I urge you gentlemen to think objectively and consistently on this question of government intrusion upon private business. The medical profession will never remain free if other businesses and professions become captives of a bureaucratic government.

And just in case the idea of socialized medicine may appeal to some of you, let me read a couple of paragraphs from an Associated Press dispatch issued only a few months ago under a London dateline:

"Britain's doctors Thursday announced a plan for partial withdrawal from the state-run health service because the government has refused to increase their pay.

"The plan calls for thousands of doctors in selected areas to withdraw, but to continue treating patients free for a month while living on subsidies from other doctors."

There you have it! Doctors on the picket line along with the coal miners and packinghouse workers!

Now if this prospect does not appeal to you, you had better get on the ball, gentlemen, and give some thought to a good public relations program down at the level where it will come in contact with the people.

And the next time you are mixed up in a discussion of public power, or government operation of steel mills, you had better get on the right side of that argument! If and when government control is extended to any of those major industries, you can be sure that government control of medicine won't be far behind.

Joint Blood Council's Postcard Survey

The Joint Blood Council, Inc. has discovered, by means of its "postcard survey"* that more than 4,500,000 blood transfusions were given to nearly 2,000,000 Americans during 1956, and that approximately 5,000,000 pints of blood were collected through various agencies during the same length of time.

The survey showed that hospitals obtaining blood from voluntary unpaid donors got for themselves a surprisingly large share of the blood they used. They collected 36 per cent of it, as compared with 38 per cent collected by the American Red Cross, 11 per cent by commercial blood banks, 9.5 per cent by non-hospital community blood banks, 4 per cent by inter-hospital borrowing, and 2 per cent from directly-paid donors.

The survey is the first step in a comprehensive study of the total American blood transfusion program. The Council hopes the study will eventually lead to a smoothly operating and well-organized national blood program. A second survey seeking more specific details is now underway.

* J. Iowa M. Soc., **47**:696-700, (Nov.) 1957; J.A.M.A., **165**: 1135-1141, (Nov. 2) 1957.

Lawyer-Physician Relations in Accident And Compensation Cases

WALTER D. ABBOTT, M.D.

DES MOINES

In what I shall have to say, it shall be my purpose to encourage better understanding and cooperation between the two professions, Law and Medicine. Considerable work of that sort has already been done. It is quite significant, for example, that Mr. David F. Maxwell, president of the American Bar Association, was the first officer to address the American Medical Association at its interim clinical session in Seattle in December, 1956.

Recently, there have been meetings and panel discussions participated in by representatives of the bar and the medical societies of Iowa at the county and state levels, and they have promoted better relationships. In April, 1956, a committee which included representatives of the Iowa State Bar Association and the Iowa State Medical Society presented a set of standards of practice governing lawyers and physicians to the House of Delegates of the latter organization. Subsequently, the document was published in the JOURNAL OF IOWA STATE MEDICAL SOCIETY,* and though it is probable that many of you read it at the time, I intend to quote liberally from it, and to comment upon some of its sections.

A. REPORTS TO BE FURNISHED

"(1) Where report is requested by the patient's attorney, supported by proper written authorization from the patient, and where the report is to be based on information which the physician can obtain from his own office records, he should furnish a report with or without reasonable charge at the discretion of the parties involved. And similiarly, where the requested report would require an additional examination of the patient, or would require that the physician check hospital records, a charge should be made in an amount to be agreed upon between the physician and the patient.

"(2) Where the report is requested by someone other than the plaintiff, or the plaintiff's attorney, the physician should insist upon proper authorization from the patient before giving the information or the report, and his charge for such a report should be in an amount to be agreed upon between him and the patient seeking that report.

"(3) When a report is requested, the lawyer should make clear in his written request for report, the specific condition about which he seeks information, and should likewise indicate whether or not he is asking for a prognosis. The physician, upon receipt of such request, should answer such request and furnish such report promptly.

B. PHYSICIAN TESTIFYING OR RENDERING DEPOSITION

"(1) The relation between a lawyer and a physician should be based upon mutual courtesy and understanding. A physician should understand that medical testimony is frequently indispensable to prove or disprove the nature and extent of injuries. Therefore, where he undertakes to treat a person who has been injured, he has incidental responsibility to cooperate with the patient and his attorney if litigation ensues for recovery of damages for the injuries so sustained.

"(2) It is understood that the fee charged by the physician for his medical services does not take into account any further time or effort on his part in the event of such litigation, and therefore these standards recognize that it is right and proper that the physician should be further compensated for any additional time or effort expended by him in such litigation.

"(3) A physician should attend court at the time appointed. The lawyer should appreciate, however, that a physician has continuing and often unpredictable responsibilities to his patients. In so far as he is able, the lawyer should make arrangements to permit the physician to testify with a minimum of inconvenience and delay to him.

"(4) It is recognized that in most instances it is proper that a conference should be held between the physician and lawyer proposing to call him as a witness, at some mutually convenient time before he is to testify.

"(5) No physician should be subpoenaed as a witness to testify in any case without prior conference with the lawyer calling him, concerning the matters as to which he is to be interrogated, unless the physician and the lawyer agree that such conference is unnecessary." It seems to me that such would be a trivial case.

"(6) It is recognized that whether a consultation

Dr. Abbott, the president-elect of the Iowa State Medical Society, read this paper at a combined meeting of the Scott County Bar Association and the Scott County Medical Society in Davenport, on September 19, 1957.

* J. Iowa M. Soc., 46:410-411, (Jul.) 1956.

fee is to be charged to the patient for such conference, and if so, the amount of such fee, should in all cases, depend upon the circumstances pertaining to each case, including the physician's time required in such conference, the extent of his previous services for the patient, and the ability of the patient to pay for such services. Therefore, the amount of the fee, if any, should be a matter of agreement between the physician, lawyer and patient.

"(7) It is recognized that, although every reasonable effort should be made to minimize the inconvenience to the physician witness, the dispatch of the duties to the courts cannot be governed by the convenience of litigants, lawyers or witnesses, whoever they may be.

"(8) In so far as it is in their power to do so, however, lawyers should make such advance arrangements for the attendance of physicians as witnesses, as will have due regard for the professional demands upon the physician's time, including preparation of medical evidence. Such advance arrangements contemplate some reasonable notice to the physician of the intention to call him as a witness, prior to the issuance of the subpoena, and calling him by phone after the trial has commenced and advising him of the approximate time when he will be called to testify."

In a discussion of medical expert testimony at a legal-medical symposium sponsored by the Law Department of the American Medical Association in Omaha, on October 6, 1955, Dr. L. Willard Shabat suggested a more thorough consultation and preparation between the attorney and the physician, and recommended the article "Let's Understand Each Other," which had appeared in the December, 1954, issue of MEDICAL TRIAL TECHNIQUE QUARTERLY, which the AMA publishes. Indeed, he suggested that the article be kept available for constant reference.

"(9) When a physician is called to testify as a witness for his patient, the charge, if any, to be made to such patient, shall be the equivalent of what the charge would be to such patient for the same amount of time and skill for professional service.

"(10) When a physician is called to testify as an expert witness, he shall be paid such a fee as is agreed upon with the lawyer representing the party calling him."

The opinion of the physician may be a factor in settling a case, and if so, when arrangements have been made, particularly for the witness to be called out of the city, and when the case is settled after he has changed his busy schedule, it should be agreed that his learned opinion ought to be regarded as a factor in the determination of the settlement and that he should receive a fee equal to that which would have been due him if he had made the trip and rendered his testimony in court. It must be borne in mind that changing his schedule and then changing it back again will have created considerable inconvenience for the physician, for his staff and for his patients.

"(11) No arrangement shall be made whereby the amount of the physician's charge for his time as a witness shall be determined by the amount of the recovery by the patient in the litigation. Nothing herein is intended to alter the rules of law involved in reference to attendance of witnesses and fees for their attendance, nor the law with reference to privileged communication.

C. PHYSICIANS' FEES AND SERVICES

"(1) It is fully understood that under no circumstances should the physician's fees as a witness, be contingent upon the success of the patient's litigation.

"(2) When the physician has not been fully paid by the patient, either for his regular professional services or for his time as a witness or both, the lawyer shall request permission of the patient to pay the physician for such services, out of any recovery money which the lawyer may receive on behalf of such patient."

CONSIDERATION OF TRAUMA

Trauma is an insult to the body or any part thereof, and may be both physical and psychic. It is difficult for the physician to evaluate all of the facets of a patient's personality and his emotional stability if he has never seen him before, and he must base his premise, corollary and conclusion on the history he has obtained, on his physical and clinical examinations, and wherever appropriate, on pathologic and roentgen studies. As the patient's condition progresses or declines, further information may be obtained as to the circumstances that were involved in the injury, whether industrial, highway, home or some other sort.

The patient's attitude and his determination or desire to get well are important. It has been my observation that the average self-employed person usually returns to work sooner than does an employee whose case is covered by compensation. I do not mean to imply that all individuals covered by compensation or involved in litigations are malingerers or victims of hysteria, but it has been interesting to observe the effectiveness of a green poultice.

When an attorney has referred a client for a medical opinion, it is of extreme value to the specialist to have all available information so that he can render an honest and fair report.

At the October, 1955, meeting in Omaha to which I referred once before, G. C. A. Anderson, LL.B., of Baltimore, stated that an expert witness is sometimes employed to testify and not to treat, and that often the plaintiff's expert evaluates his findings in favor of the plaintiff and the defend-

ant's expert evaluates his findings in favor of the defendant. Thus, the case becomes a trial of partisan witnesses. In an attempt to correct this situation, programs have been set up in New York by the Association of the Bar, City of New York, the County Lawyer Association, the New York Academy of Medicine and the New York Medical Society. The justices of the Supreme Court of New York County were sponsors and the Alfred P. Sloan Foundation and the Ford Motor Fund made a grant of $40,000 to finance the work. The Court was dissatisfied with the conflicting medical testimony given by experts retained by opposing parties and recognized the need for authoritative and impartial medical examinations and reports, and impartial medical referees were employed instead.

Similar plans have been established in Maryland and in California. However, particularly in Maryland, it was felt that referees should be used only in difficult cases where adequate testimony had not, in the opinion of the judge, been rendered. In 1950, the Baltimore City Bar Association appointed a committee to consider the problems of the lawyer relating to doctors engaged in the practice of medicine, to make contact with comparable committees of doctors for the discussion of problems of mutual interest, and to plan open-forum discussions of those problems by lawyers and doctors. By that means, it is hoped, the number of difficulties arising from conflicting testimony may be kept to a minimum, and an impartial board of physicians is employed by the court only in exceptional instances.

I object to an imposed panel in trials where medical issues are involved because of the destruction of personal liberty that is involved, particularly because I feel that the best interests of the parties involved are not well served by that means. The board of experts so appointed doesn't examine the patient; it bases its opinion solely on written reports. I do feel, however, that a panel is necessary when very substantial discrepancies exist between the opinions of the experts on the two sides or when the situation is otherwise special and extraordinary.

It is the obligation of the physician to render his opinion in a detailed and clear report, devoid of technical terms in so far as is possible.

The degree of partial or total disability is a point on which honest lawyers and physicians have difficulty in agreeing. For the physician it is a hazardous undertaking to estimate what God and nature may hold in store for his patient, and since Law, too, is an inexact science, the doctor and the lawyer probably should disucss the question frankly and thoroughly on more than one occasion.

I feel that a thorough report and helpful suggestions from the physician will be of value to the attorney in preparation for trial.

I also urge that doctor and lawyer enter into a fair discussion, as recommended by the Joint Committee of the Iowa Bar Association and the Iowa State Medical Society, regarding the times and places at which the doctor is to appear in the course of the pending litigation, the fees to which he is entitled and whatever other considerations are pertinent.

Fair treatment of the physician is urged. Actually, however, I do not feel that any well-qualified physician need fear any browbeating at the hands of an attorney, and it is certain that questioning will be handled fairly, within keeping with the dignity of the court.

I should like to recommend further conferences and panel discussions be conducted by doctors and lawyers, so that mutual understanding and complete cooperation may be fostered between these two honored professions. The welfare of our patients and clients can be immeasurably benefited in that way.

Coming Meetings

In State

Dec. 2-4	**North Central Section, American Urological Society.** SUI, Iowa City
Dec. 11-12	**Tumor Conference** Sponsored by Iowa Division, Am. Cancer Society and SUI College of Medicine. Med. Amphitheatre, Iowa City

Out of State

Dec. 1-15	**Fourth Bahamas Medical Conference.** Fort Montagu Beach Hotel, Nassau
Dec. 2	**Regional Conference, AMA Committee on Aging.** Bellevue-Stratford Hotel, Philadelphia
Dec. 2	**Regional Conference, AMA Committee on Maternal & Child Care.** Bellevue-Stratford Hotel, Philadelphia
Dec. 2-3	**Interim Session, American College of Chest Physicians.** Warwick Hotel, Philadelphia
Dec. 2-4	**Infertility (N.Y.U. Department of Obstetrics & Gynecology).** Bellevue Medical Center, N.Y.C.
Dec. 2-4	**Diagnosis and Treatment of Poisonings (N.Y.U.).** Bellevue Medical Center, N.Y.C.
Dec. 2-6	**Pediatric Cardiology.** N.Y.U., N.Y.C.
Dec. 2-6	**Application of Histochemistry to Pathology.** Walter Reed Army Medical Center, Washington
Dec. 2-6	**Surgery of the Cornea (N.Y.U.).** Bellevue Medical Center, N.Y.C.
Dec. 2-6	**Congenital & Rheumatic Heart Disease in Infants & Children.** Cook County Graduate School of Medicine, Chicago
Dec. 2-6	**Pediatric Cardiology (N.Y.U.).** Bellevue Medical Center, N.Y.C.
Dec. 2-7	**Clinical Cardiopulmonary Physiology in Internal Medicine.** U. of Vermont, Burlington
Dec. 2-13	**Cystoscopy.** Cook County Graduate School of Medicine, Chicago

Dec. 2-13	**Air Pollution.** N.Y.U., N.Y.C.
Dec. 2-13	**Diagnostic X-ray.** Cook County Graduate School of Medicine, Chicago
Dec. 2-13	**Pediatric Cardiology.** Cook County Graduate School of Medicine, Chicago
Dec. 2-13	**Surgical Technic.** Cook County Graduate School of Medicine, Chicago
Dec. 2-14	**Endoscopy: Bronchoesophagology & Laryngology.** N.Y.U., N.Y.C.
Dec. 2-14	**Diagnostic Radiology Course I.** Cook County Graduate School of Medicine, Chicago
Dec. 3-6	**AMA Clinical Meeting.** Convention Hall and Bellevue-Stratford Hotel, Philadelphia
Dec. 4-6	**Annual Ophthalmological Conference.** University of California, San Franciso
Dec. 4-7	**Childhood Diabetes.** University of California, San Francisco
Dec. 4-7	**Ocular Manifestations of Systemic Disease.** University of California, San Francisco
Dec. 5-7	**Fractures for General Physicians.** University of Minnesota Center for Continuation Study, Minneapolis
Dec. 5-7	**American Rheumatism Association.** Washington, D. C.
Dec. 6-7	**Arthritis & Rheumatism.** U.C.L.A., Los Angeles
Dec. 6-7	**Geriatric Conference.** University of Nebraska, Omaha
Dec. 6-7	**Ophthalmology** (State University of New York). Hotel Syracuse, Syracuse
Dec. 6-7	**Orthopedics & Fractures.** University of California, San Francisco
Dec. 6-7	**Physical Medicine.** University of California, San Francisco
Dec. 7	**Symposium on Radioisotopes (Milwaukee Academy of Medicine).** Brooks Memorial Union, Marquette University, Milwaukee
Dec. 9-11	**Symposium on Fluorides.** University of Cincinnati, Cincinnati
Dec. 9-13	**Clinical Bronchoscopy.** Cook County Graduate School of Medicine, Chicago
Dec. 9-13	**Symposium on Diseases of the Chest (American College of Chest Physicians).** Ambassador Hotel, Los Angeles
Dec. 9-13	**Diseases of the Chest (American College of Chest Physicians).** Ambassador Hotel, Los Angeles
Dec. 11-12	**Ophthalmology.** Frank E. Bunts Educational Institute, Cleveland
Dec. 13-15	**Clinical Cardiovascular Physiology.** University of California, San Francisco
Dec. 16-17	**Varicose Veins.** Cook County Graduate School of Medicine, Chicago
Dec. 18	**Clinical Pediatrics.** Indiana University School of Medicine, Indianapolis
Dec. 19	**Surgical Management of Gastrointestinal Anomalies in Infants.** Indiana University School of Medicine, Indianapolis
Dec. 28-29	**124th Annual Meeting, American Association for the Advancement of Science.** Indianapolis
Jan. 2-15	**Physical Medicine and Rehabilitation.** N.Y.U., N.Y.C.
Jan. 6-8	**Medical Technology.** U. of Kansas Medical Center, Kansas City, Kans.
Jan. 6-8	**Pediatric Surgery.** N.Y.U., N.Y.C.
Jan. 6-10	**Heart Diseases.** N.Y.U., N.Y.C.
Jan. 6-10	**Physical & Occupational Therapy for Neuromuscular Disease.** Warm Springs, Georgia
Jan. 6-10	**Othopedic Surgery.** Columbia Presbyterian Medical Center, N.Y.C.
Jan. 6-11	**Ophthalmology for Specialists.** Center for Continuation Study, University of Minnesota, Minneapolis
Jan. 6-17	**Laryngology & Surgery of the Larynx & Neck.** N.Y.U., N.Y.C.
Jan. 6-17	**Radiologic Safety.** N.Y.U., N.Y.C.
Jan. 6-17	**Cystoscopy.** Cook County Graduate School of Medicine, Chicago
Jan. 6-24	**Laboratory Methods in Medical Mycology.** U.S.P.H.S., Chamblee, Georgia
Jan. 8- 9	**Management of Trauma.** University of Buffalo School of Medicine, Buffalo
Jan. 9-10	**Peripheral Nerve Injuries.** N.Y.U., N.Y.C.
Jan. 9-11	**Sectional Meeting, American College of Surgeons.** Statler Hilton Hotel, Dallas
Jan. 9-11	**Fluid & Electrolyte Disturbances.** Tufts University, Boston
Jan. 9-11	**The Newer Drugs in General Practice.** Center for Continuation Study, University of Minnesota, Minneapolis
Jan. 9-12	**Psychiatry (University of California).** Mount Zion Hospital, San Francisco
Jan. 13-14	**Newborn & Prematures.** University of California, San Francisco
Jan. 13-14	**Pulmonary Disease Clinic.** U. of Kansas Medical Center, Kansas City, Kans.
Jan. 13-17	**Anatomy for Orthopedic Surgeons.** N.Y.U., N.Y.C.
Jan. 13-17	**Infectious Diseases of the Eye.** Tulane University, New Orleans
Jan. 13-17	**Neuro-Ophthalmology.** N.Y.U., N.Y.C.
Jan. 13-17	**Basic Urology.** N.Y.U., N.Y.C.
Jan. 13-18	**Cardiology (Emory University).** Grady Memorial Hospital, Atlanta
Jan. 13-18	**GP Review.** University of Colorado Medical Center, Denver
Jan. 13-24	**General Surgery.** Cook County Graduate School of Medicine, Chicago
Jan. 15	**Arthritis & Rheumatism.** U.C.L.A., Los Angeles
Jan. 15-16	**Gastroenterology.** U. of Kansas Medical Center, Kansas City, Kans.
Jan. 15-16	**Ophthalmology in General Practice & Pediatrics.** U. of California, San Francisco
Jan. 16-17	**Obstetrics & Gynecology.** U. of Nebraska College of Medicine, Omaha
Jan. 16-18	**Sectional Meeting, American College of Surgeons.** Jackson, Miss.
Jan. 17-18	**Dermatology Clinics.** U. of California, San Francisco
Jan. 17-18	**Non-Traumatic Emergencies (U. of California).** Franklin Hospital, San Francisco
Jan. 19	**Seminar on Heart Disease.** U. of Cincinnati, Cincinnati
Jan. 20-21	**Radiologic Safety Laboratory.** N.Y.U., N.Y.C.
Jan. 20-23	**Thirteenth Annual Postgraduate Course in Surgery.** U. of Kansas Medical Center, Kansas City, Kans.
Jan. 20-23	**Cancer.** University of Buffalo, Buffalo
Jan. 20-23	**Gastroenterology.** Rochester General Hospital, Rochester, N.Y.
Jan. 20-24	**Clinical Bronchoscopy.** Cook County Graduate School of Medicine, Chicago
Jan. 20-31	**Laboratory Methods in Diagnosis of Tuberculosis.** U.S.P.H.S., Chamblee, Georgia
Jan. 20-31	**Cystoscopy.** Cook County Graduate School of Medicine, Chicago
Jan. 20-Feb. 1	**Cancer Therapy for Surgeons.** N.Y.U., N.Y.C.
Jan. 21	**California Conference on Rural Health.** Bakersfield Hacienda, Bakersfield
Jan. 23	**Surgical Emergencies.** U.C.L.A., Los Angeles
Jan. 23-24	**Diagnostic Radiology.** Tulane University, New Orleans
Jan. 24-26	**Surgical Diagnosis in General Practice.** U. of Southern California, Los Angeles
Jan. 25	**Pediatric Hematology.** U. of California, San Francisco
Jan. 26-28	**Patho-Physiology of the Gastrointestinal Tract.** U. of California, San Francisco
Jan. 27-28	**Pulmonary Function & Pulmonary Disease.** Indiana U., Indianapolis
Jan. 27-28	**Pathophysiology of Gastrointestinal Tract.** U. of California, San Francisco
Jan. 27-29	**Pediatrics.** University of Michigan, Ann Arbor
Jan. 27-29	**AMA Congress on Industrial Health.** Schroeder Hotel, Milwaukee
Jan. 27-Feb. 1	**Midwinter Seminar in Ophthalmology & Otolaryngology.** University of Florida, Miami Beach
Jan. 27-Feb. 7	**Endaural Surgery.** N.Y.U., N.Y.C.
Jan. 27-Feb. 7	**Medical Advances in Cardiovascular Disease (Columbia U. College of Physicians & Surgeons).** Mt. Sinai Hospital, N.Y.C.
Jan. 27-Feb. 7	**Surgical Technic.** Cook County Graduate School of Medicine, Chicago
Jan. 29-31	**Obstetrics & Gynecology.** U. of Michigan, Ann Arbor
Jan. 29-31	**Office Psychiatry.** U. of Tennessee, Memphis
Jan. 30-Feb. 1	**Emergency Surgery for GP's.** Center for Continuation Study, University of Minnesota, Minneapolis.



The General Practitioner and the Patient With Anxiety

EDWARD G. BILLINGS, M.D.

DENVER, COLORADO

Several years ago, my confreres and I made a study which indicated that out of every six patients who walk into a physician's office, at least one is fundamentally and in the main non-effective because of his anxieties and his attempts to compensate for them, though at the same time he may have some incidental and non-relevant organic defect or disability.

At the 1956 convention of the American Public Health Association, a group of psychiatrists and public-health physicians from the Commission on Chronic Illness gave the results of a four-year survey of mental illness in a large eastern city. They reported in essence that one out of every 10 persons currently "walking the streets" of any large city is mentally sick. This figure must be accepted as a very conservative one, for these surveyors excluded from their study all those in the community who were receiving treatment for mental illness at the time of the survey, all patients currently in mental hospitals, all children suffering from behavior disorders, and all adults who were alcoholic or had minor personality defects. These men doubted very much that a population having more than this rate of emotional illness, in addition to the load of chronic and acute diseases to be found in the population of any large city, could function long as a society.

I believe it is generally conceded that the very roots of the disorders of personality which are referred to as mental illness are to be found in the threat of anxiety or in its actual occurrence, depending upon how it affects the particular personality and how that personality wittingly or unwittingly attempts to compensate for it.

Dr. Billings is a private practitioner of psychiatry and an associate clinical professor of psychiatry at the University of Colorado School of Medicine.

WHAT IS ANXIETY?

Anxiety, like fear, is an emotional experience which every human being may undergo. When it leads to less effective living, to maladaptation and to suffering, as is often the case, it is abnormal. But it can be a normal and sometimes is a beneficial experience.

Let me belabor this point further. Though the title of this paper implies that anxiety is pathologic, I want to emphasize that it actually is more often good than bad. Fear provides us a useful analogy. If it were not for fear, we physicians would not have the caution and judgment that we need in carrying out an operation successfully or indeed in driving a car safely through traffic. As a result of our fear that harm may come to those we love, we protect and help them. Because of fear that we may lose our station in life and our security, we work hard for success. Such fear is normal and beneficial. But, on the other hand, fear disproportionate to the provoking situation can lead one to unwarranted and sometimes irrational action, and it may disorganize him to the point that his judgment, caution and ability to take corrective action are interfered with. It is then harmful and abnormal.

Anxiety, like fear, may be healthy and normal, or it may be abnormal and interfering. Life is, among other things, a continuing struggle, and it is normally accompanied to some extent by strain, worry and anxiety. Without stress, with no worry and without any anxiety, it could well be devoid of usefulness, and the absence of those such phenomena could constitute evidence of a serious mental illness existing. Thus, if anxiety is helpful to the human being by aiding him in developing a better way of living, not just by making him avoid stress,

it is normal and good. However, if anxiety springing from inner conflict is incapacitating, and makes useful living and constructive action difficult or impossible—if it rules the person—it is abnormal and must be classed as neurotic in type and/or amount. It is, of course, this latter that often forces the patient to seek help.

Anxiety, like fear, is an emotional experience in which every human function participates to some degree or other. If the anxiety is relatively mild, perhaps it is apparent only to the person experiencing it, but if it is of greater magnitude, there usually are physiologic and other functional variations which the observer can appreciate and understand.

SYMPTOMATOLOGY

What does the anxious patient experience? He experiences the more or less sudden feeling of an impending danger—a feeling of uneasiness, an unpleasant expectancy of something about to happen within himself. This feeling may occur when the patient is in a particularly stressful situation; it may occur when he is going about his usual duties or indulging in other average and ordinary activities; and, particularly in the male, it may occur when he has completed his day's work and has just settled down to "relax" with the evening paper or when he is getting into bed to go to sleep. With this sense of impending danger from within, the person usually experiences some feeling of oppression of breathing, and along with this sensation there are, on occasion, various feelings of pain or discomfort here and there over the left anterior chest. The patient experiences palpitation, dryness or tightness in the mouth and throat, usually a feeling of fullness or giddiness in the head, frequently a momentary blurring of vision as his pupils dilate, and often a shivery sensation of the skin, or "goose pimples" and perspiration. Not infrequently he suffers various sensations with reference to the abdomen, such as "gas on the stomach—heaviness—sick to the stomach," epigastric cramping, frequency of stool or flatulence, and a feeling of weakness which the patient often describes as "My knees feel as though they will give way, my energy leaves all at once, I feel faint, and for a moment I can't do anything."

If the reaction is reasonably severe, the observing physician or family member may note that the patient has a dilatation of his pupils and may have some increase in rate and irregularity of the pulse—at least an extra systole now and then. His voice may change because of the diminution in salivary flow, he perspires, frequently he trembles, and certainly he gives evidence of uneasiness and suffering. This experience in itself as a rule lasts only a few seconds, but it may recur with such frequency that the patient feels the total experience has been of an hour's duration.

Following the episode, the patient usually feels let down, weak, trembling and deeply concerned. This experience is an alarm reaction that the individual who has experienced it cannot ignore. It becomes mandatory that he understand it and do something about it. What happens from there on—within the patient himself and in his environment—can well determine his future health and efficiency.

THE HOW AND WHY OF ANXIETY

I have already said that such an experience is possible in any human being and that it is obviously emotional in nature. Now I should like to say, in a few words, how this phenomenon occurs and why it occurs, for in so doing I believe I may be able to give some implied suggestions as to the means by which the patient may be introduced to its true meaning and may be given something into which to set his teeth. The assurance that he has no physical or neurologic disease may be momentarily reassuring, but later leaves him empty-handed.

When the patient comes to us and describes his symptoms, and when we observe the objective signs, we examine him physicially and neurologically, and explain to him that he is physicially and neurologically intact. But then we tell him, either directly or by implication, that he is suffering from an "emotional" disorder. Now here is the first stumbling block, both for the physician and the patient. The chances are good that the patient won't understand what the doctor is talking about, and the doctor won't realize that he isn't being understood. If the average person were asked the meaning of the term *emotion,* he would reply promptly and proudly, "Why that's when you are frightened, angry, happy, sad and so on." But that definition is by no means accurate, for fright, anger and the rest are in actuality only experiences that result from emotional activity.

What, then, is a correct definition of the word *emotion?* The term, when it is used accurately, designates the very complex and quite automatic regulatory system which acts through its chief mediators, the autonomic nervous system and the endocrine and enzyme systems, in maintaining internal physiologic harmony. In short, emotion has to do with keeping the person in a state of readiness or preparedness to cope with occurrences in his environment, both internal and external. It has to do not only with the constant maintenance of activity and harmony of the individual's more vital functional systems, but also with the marshalling and remarshalling of all his internal resources. Such simple acts as rising from one's chair and initiating voice—activities which we take for granted as just occurring—require a preliminary or antecedent reshuffling of our internal functional milieu. This state of inter-

nal preparedness is constantly existent in varying degrees, ranging from a low ebb when one is completely relaxed and less than ordinarily conscious as in deep sleep, to perhaps a peak when he is faced with a situation that spells hazard or danger. Technically, we refer to this everchanging state of internal preparedness for action as *tension.*

Since I have referred to the fact that anxiety is potentially common to all human beings, just as is fear, and since I have now made reference to fear a second time, perhaps we should stop for a moment to ask ourselves what a fear reaction actually is. When one is confronted with a situation or an object that he perceives or conceives is a threat to his existence, there is a sudden, automatic marshalling of his internal resources to meet the issue. His tension rises abruptly, and after it reaches a certain height—irrespective of intellectualization, will-power, etc.—he is automatically still further prepared for an emergency. Among a multitude of inner functional preparatory occurrences, there are—to mention but two or three—the dilatation of the pupils to increase the field of vision, an increase in heart rate and blood pressure on account of his need for more blood here and there, and a blanching of his external surfaces as the capillary bed in his skin contracts in order to send his blood where he is less likely to lose it. When he has overcome the danger or has escaped from it, there is a sudden diminution in his tension, with the result that for a few moments he may feel "all gone." Here, then, is an illustration of an acute, emergency increase in the individual's internal state of preparedness or tension—a more or less automatic readying of himself, as a personality, for action. In anxiety, however, the individual very likely is *not* reacting to what is actually taking place in his environment at the very moment of the anxiety attack. Rather, his tension has been gradually increasing over a relatively long period of time. The increase has taken place as a result of a great number of factors, depending on his individual makeup and upon what has happened to him throughout his lifetime.

Every person enters the world with little other than functional potentials. As life goes on, these intellectual, emotional and biological potentials grow and bloom into more or less full-fledged capacities. Likewise, the continuing and everchanging things that happen to him, *and his feeling about these happenings,* determine in a large degree how he learns to utilize and apply his personal resources for maintaining his own inner equilibrium and for staying in relative harmony and adjustment with his world environment. The greater number of these happenings that have to do with shaping his habits of living are taken for granted and forgotten. As each day unfolds, he is called upon to make adjustments that had never before been required. He goes about meeting these new expriences in terms of whether the earlier ones of a similar nature brought him success and pleasure, defeat and embarrassment, security and love, rejection and hate, etc. This is what determines the way in which a person goes about the business of living. He is often altogether unconscious of his reasons for doing as he does, for he is driven by hidden conflicts, forbidden urges, desires, loves, hates and the associated variations in his inner tensions. Thus one person may find a "taken for granted" living excessively strenuous and sometimes overwhelming, and another may find it seemingly empty and impoverished, with the result that the two individuals are subjected to equal degrees of strain.

After this explanatory digression, let us return to our hypothetical patient who has experienced full-fledged anxiety. Using a consolidated protocol of hundreds of cases, I shall attempt to show what the forewarnings of the anxiety attack might be, what may happen after its occurrence and, again by inference, how such events can complicate the patient's handling of his anxiety.

Before the anxiety attack, it is probable that there already have been a good many so-called bodily protests to the stress of life, in the form of various types of functional disturbances. For example, one patient's perfectly normal gastrointestinal tract may have begun to misbehave, producing various subjectively experienced forms of "indigestion," felt as a "growling bowel" or abdominal discomfort associated with objectively observable motor dyskinetic phenomena and secretory variations. Another patient's skin functions, though potentially altogether adequate, may begin to reverberate with some form of neurodermatitis, by virtue of its being under this automatic regulating and control system of activities. Another patient's chemical and metabolic organizations may be made disharmonious, and asthma, urticaria, disturbance in cholesterol metabolism, water imbalance, etc. may result. Perhaps the sleep rhythm may be disturbed. Practically always there is an unaccustomed fatigability. All of these are symptoms of tenseness and are warnings that something is wrong with the patient's personal business of living. But he is unaware of the significance of these signs and often pays little heed to them, thinking them no more than transitory difficulties.

However, since he is chronically quite tense, any additional activity that he may be called upon to undertake, insignificant though it may seem, requires an increase in his internal state of preparedness, and because his reserves already are diminished to the point where he has lost adjustment flexibility, as it were, the anxiety attack that I have described is triggered off. It is a startling experience, a "red alert" which he, as a living creature, must heed.

Naturally he looks about him and finds no unusual situation, certainly nothing that should provoke fear. In his efforts to find an explanation, he runs through a self-inventory. Could he have a brain tumor, a coronary occlusion, a peptic ulcer, tuberculosis, hyperthyroidism or cancer? He now has a reason to be apprehensive and as a result becomes more tense and anxious. He then goes to his physician. His apprehension and his need to be explicit so as not to be slighted in the rush of modern Medicine, together with his desire to get back to his job, lead him to describe only a portion of the problem that has brought him to the physician's office.

He is summarily examined physically and/or neurologically and laboratorially, and far too frequently he is told, "There is nothing wrong with your heart, thyroid gland, etc." At this point the patient, on the threshold of decompensation, begins to think that there must be something "really bad" that the doctor is reluctant to tell him about. He guesses that he is being "let down easy," for the time being, and these baseless suppositions make him even more uneasy, tense and anxious than he was before he left home. Perhaps his anxiety reaction occurred while in a business conference and in an attempt at simple self-preservation he puts an end to the conferences. Similarly, a housewife's anxiety attack may have taken place at her weekly bridge club or when she was buying pork chops, and consequently she resolves to give up cards or going to market. The attack may have taken place as the individual lay down to relax to go to sleep, with the result that apprehension about retiring enters the picture. Thus, interests and activities may be whittled away, and as a result dissatisfaction, discontent and a sense of failure come to prevail. More importantly, the inner uneasiness increases.

Ultimately, his medical advisor tells him that he has "a case of nerves" or that he has "an emotional problem." At the same time, his family and his friends admonish him to stop worrying, to quit thinking, to cease remembering, to take it easy and to buck up. Since he believes that emotional functions are subservient to intelligence and will-power, he then attempts to do some "positive thinking," to read the family doctor-book or the psychologic tomes that he can find in the library, or to peruse the READER'S DIGEST, the LADIES' HOME JOURNAL or the SATURDAY EVENING POST for medical advice. Thus he attempts to use intellect and will-power to control his emotional functions, though that is humanly impossible. If he continues being anxious and experiencing physiological repercussions, he is certain, in his ignorance of things pertaining to human nature, to come to the conclusion that he is "losing his mind." His tenseness and anxiety increase, he has discontinued so many of his accustomed activities that he has become virtually a recluse, and, as the old saying goes, there is nothing for him to do but to "stew in his own juice."

If this state of affairs continues for any length of time, compensatory personality reactions take place. We may see the whole affective-autonomic-hormonal organization begin to function in such a fashion that the average rhythms of efficiency and fitness and mood are accentuated, and the patient may find himself in the throes of a depression or —the opposite—an exaltation. Or again, if he is so constituted that some of his thinking functions become disturbed along with his more somatic activities, some disorders may occur in his logic and thinking, with resultant obsessive and compulsive trends and delusional developments. If his sensory functions are markedly involved—and in prolonged states of tension they usually are, so that one's acuteness of hearing and vision are extremely accentuated—misinterpretations as to what goes on around him may take place, and full-fledged hallucinatory phenomena may ultimately develop.

TREATMENT

When these latter complications occur, the necessary corrective technics are so time-consuming and so demanding of patience and special technology that only an experienced psychiatrist can undertake the job. Up to this point, however, physicians in other fields are in position to understand the tense and anxious patients and to guide them into normal and healthy channels of living.

Once having arrived at a diagnosis in which anxiety is of such prominence as to require attention, the physician should next decide whether he can treat the patient and whether he wishes to do so. If it is his attitude that the patient is merely another "damned neurotic," someone who wants to be ill, or someone who knows why he is anxious and is just perversely withholding information, then he should admit to himself that he is not qualified. Likewise, he should disqualify himself if he can't give the patient 30 minutes of treatment time daily, if the patient is in the hospital, or give him the same amount of time once or twice a week in the office. But if the doctor feels he isn't qualified to undertake the treatment, he still has an obligation. He can at least explain to the patient what the nature of his disorder is, and assure him that it is a respectable ailment and a remediable one. Then he can arrange for the patient to obtain the necessary assistance.

A physician is qualified to assist an anxious patient if he accepts the axioms that only through understanding can he treat, and that one can understand through taking time, maintaining a modicum of patience and *listening*. By the time the doctor has elicited a full description of the patient's subjective complaints, learned the de-

velopment of the illness, discovered something of the highlights of the patient's past, examined him physically and explained in the simplest words what the symptoms mean, he has begun to establish one of the most powerful healing forces in the whole armamentarium of medical science —*rapport*. This rapport between doctor and patient has sometimes been called "transference." Sometimes it is referred to merely as trust, confidence, faith, admiration or something else of that sort. But in any event it is the essential factor in the good relationship which helps a physician prevent his sick patient from slipping backward or regressing to the reactions and fears that he experienced and indeed used, during early periods of his life, in trying to stay in adjustment. It is rapport that enables the physician to make the fullest use of persuasion, direction and suggestion in helping the patient to remarshal his personality resources in regaining his internal equilibrium.

Sometimes the doctor may be perturbed over the type of rapport achieved. A patient may develop untoward feelings about his doctor, becoming suspicious and antagonistic. Another patient may go rather too far in the opposite direction, with the result that the physician becomes too important to him, too omnipotent. The doctor must be quick to recognize such a development and must work to keep the patient as independent as possible. The patient may develop a romantic attachment for the doctor and, as a result, manifest attitudes of various kinds that do not belong in the doctor/patient relationship. When the physician becomes aware of what is happening, he may be startled. Under no circumstances may he take such relations personally. A frank, honest, firm and reassuring approach, accompanied by adequate explanations devoid of rejection, is his best means of continuing in the role of a helpful counselor.

With rapport established, treatment becomes essentially an educative process. That is not to say that treatment is a procedure of lecturing to the patient. Rather, the doctor encourages the patient to talk about his life experiences, and to tell how he felt and still feels about them, thus gaining perspective and learning how such feelings have helped or hindered in molding his pattern of life. The patient objectifies his hidden conflicts and guilt feelings, his hates, his loves and his unacceptable impulses, and learns how they have influenced his behavior and interfered with his adjustment. He learns of his biased attitudes and hampering sentiments that stemmed from mixtures of fact and fiction, or from fictions that he mistook for facts.

By reviewing experiences that were highly charged emotionally, the patient is enabled to see them in a clearer light, is more able to forget or repress them more successfully as the emotional charges are "vented off," and thus he is freed to direct his attention and energies to other performances that pay him dividends in the form of satisfaction. So the patient becomes unshackled and can indulge in broader and fuller activity when, through persuasion and suggestion, the doctor has guided him gradually to a return to normal and full-fledged living. As the patient does so, he loses his fear that he may die if he climbs the stairs or goes out socially or even relaxes in sleep. Thus, step by step, he regains confidence in his body and then in himself as a person.

The doctor has used *rapport* to induce the patient to venture forth, to take a chance and to regain a greater degree of freedom and ease, as his internal functional harmony is reestablished. As this goes on, the doctor must help him to understand how he can better balance his general program of work, rest and recreation in keeping with his bodily, emotional and intellectual abilities. The patient learns to accept some symptoms as indicators of how well he is abiding by the rules of life with which he is compatible and by the limits of activity that he must observe if he is to continue to be efficient. Perhaps the patient needs to reexamine his criteria for success and failure, to ask himself what he really expects out of life, and to decide what sorts of goals he'd be reasonably willing to settle for.

BE CAUTIOUS IN USING CHEMOTHERAPY

From the beginning, the physician often has numerous chemicals at hand that play on the emotional-autonomic-hormonal control functions. Through the judicious use of these, he can render the patient temporarily more comfortable and functionally effective and can enable him to collaborate more satisfactorily in achieving the objectives just enumerated. But in using such chemicals in a symptomatic and supportive way, the doctor must be wary. If he masks the symptoms too much, the patient will bask in a false security and will lose incentive for finding a real solution to his problem. He will postpone getting well, become dependent upon medication and probably develop complications from the drugs, thus growing sicker than he was before he started taking them. The pharmaceutical house is then the only gainer. By masking symptoms and signs too much, the doctor loses all ways of accounting for his patient's condition. He relinquishes his scientific knowledge and skill to a pill, and as a result he will lose a patient and some of his own reputation.

Symptomatic and supportive medications should be used in minimal amounts. One has to feel his way along. When restoring a reverberating affective-autonomic-hormonal functional complex to smooth operation, start with near "homeopathic" doses and work up if necessary. Explain to the patient what you are doing. He will accept the

procedure as a therapeutic experiment. Experience has shown that one seldom has to increase the dose very much. He cannot succeed by literally "jarring" these control functions first one way and then another.

No doctor should ever terminate treatment of a psychiatric patient of any kind without first getting rid of symptomatic and supportive drugs. This country is becoming saturated with hundreds of thousands of people whose functional alarm bells have been tranquilized with chemical cotton. They are floating in ignorant bliss, and we physicians are acting like ostriches as we fool ourselves into believing that we have healed, when we have only tranquilized.

The patient and those constituting his society, through ignorance, certain beliefs, various rigidities, unwillingness to make concessions or to place confidence in others may cause a situation to exist which, through the knowledge, diplomacy and experentially determined skill of the doctor, must be corrected before the patient can be truly helped.

IATROGENIC ANXIETY

In concluding this discourse on the general practitioner's handling of a patient with anxiety, I should like to bring to your attention the fact that we physicians have a very real responsibility for helping to prevent the occurrence of these reactions. Though we are inclined to forget it, all of us know the basic doctrine of good medical practice that "if one does nothing to benefit the patient, he must at least be sure to do him no harm." This admonition has reference not only to somatic or physical harm but also to the psychological variety.

In our contacts with the patient, whether he be physically or psychologically ill, we should guard against either saying or doing things which he might interpret to his own disadvantage. In listening to his history, we must take care not to exclaim with surprise, look startled, appear too enthusiastic or otherwise encourage him to "read between the lines" in interpreting what we tell him. He is especially likely to draw upon his imagination and to arrive at incorrect conclusions if, after inadvertently revealing our thoughts, we have offered no explanation of our words or actions.

Likewise, in our enthusiasm to teach we may make the mistake of asking clinical questions of interns, residents or other physicians in a patient's presence. The questions may or may not pertain essentially to the patient, and the answers that we get may be either correct or incorrect, but the patient is listening and he may become alarmed. Thus we plant a seed that may sprout into fear and apprehension. We must not forget that our patient is able to see and hear, and that because he does not altogether understand our lingo, he may take a few words or ideas out of context and apply them to himself in such a way as to add anxiety to his basic illness.

Furthermore, to embarrass our patients, to cause them discomfort or to be inconsiderate of them in any way can easily start a chain reaction of resentment, hostility, uncertainty and even suspicion. And the patient may exhibit those attitudes not only toward the doctor who first aroused them, but also toward every other physician with whom he subsequently comes in contact.

Much anxiety can be prevented if the surgeon or internist will take care to prepare the preoperative patient psychologically as well as physically.

Our handling of children not infrequently sets the stage for future concerns and anxieties. Telling the child he will not be hurt, and then hurting him, overpowering him and forcing him to take an anesthetic without any knowledge of what to expect, refusing him an opportunity to see his parents except when the visit is convenient to the hospital, taking rectal temperatures, giving enemas, doing digital examinations upon a child or a toxic or semi-confused adult without adequate explanation—all these things which the physician is likely to do without thinking can lay the groundwork for lifelong distrusts of physicians and for future anxieties.

There are other ways in which we physicians help to cause psychological difficulties in our patients. In our attempts to be highly scientific and completely honest—and, of course, to free ourselves from liability—we can go too far in elucidating a given illness. We lay bare the whole range of our knowledge, mentioning all kinds of possibilities, "maybe so's," "if's" and "but's," frequently using highly technical language, and as a result we make our patient insecure, and nullify any and all of the reassurances that we can offer.

Sometimes, too, we find ourselves playing too safe. We over-hospitalize our patients, restrict them too markedly, and isolate them too completely and for too long a period of time. Under such restrictions, a child's maturation is retarded, and an adult may regress to juvenile adjustment reactions. We must keep in mind that every individual has a profound drive to stay alive, and to stay in equilibrium within himself and in his environment, and if we give him a reasonable chance, he will usually do quite well.

We physicians have played a very important role in educating people regarding ill health, and have taught them a great deal about how to maintain good health. But in practically every instance we have relied upon fear-producing tactics. We have taught the patient something about tuberculosis and its prevention by scaring him nearly to death. We threaten him with dire consequences to make him undergo frequent examinations for the

early detection of cancer; we scare him into getting polio shots; etc. Then, when he comes to us with some complaints and we fail to take enough time to find out what ails him, don't examine him thoroughly and give him less than complete and unqualified answers to his questions, we are setting the stage for him to become tense and anxious, and at the same time distrustful of the medical profession as a whole.

GP's can take the lead in promoting mental health

It has been most gratifying to observe the increasing interest among general practitioners in the handling of routine emotional disturbances in their patients. It is they who bear the brunt of the whole problem, at least as regards prevention and early treatment. The American Academy of General Practice is to be congratulated for setting up a committee to work with the American Psychiatric Association to improve the generalist's knowledge of psychiatric medicine.

Our communities must be taught their responsibility in helping to finance the practical psychiatric training of general practitioners and physicians working in other non-psychiatric fields. We must have more psychiatric units in general hospitals, for those are the institutions in which most mental illnesses should logically be treated. Patients who are treated there escape the stigma that attaches to those who are admitted to mental hospitals, and they are kept integrated with their families and their community. It is up to our communities not only to take responsibility for seeing that these psychiatric units are developed, but also to finance them. Dollars invested in this sort of project will contribute far more to local health than will the same amount of money poured into isolated custodial institutions.

We need to develop treatment facilities for our children. The Child Welfare League of America has recently estimated that there are about half a million emotionally disturbed children in this country. At the same time, there are only about 40 residential treatment centers in the whole United States, which are capable of handling only slightly more than 2,500 children a year, and most of them are economically beyond the reach of average parents. We must have facilities to evaluate and treat these children at the very onset of emotional illness.

Finally, it is likewise from us of the medical profession that the stimulus must come for awakening our communities to their responsibilities for the welfare of our oldest group of people. The public must learn to understand them, it must provide for their vocational and social adjustment, and it must take pains to prevent them from developing anxieties.



The Midwest Cardiac Conference at S.U.I. early in October was attended by 200 doctors from 12 states. Four physicians who attended it are shown discussing a book which the American Heart Association published recently as a guide for physicians in the diagnosis of heart disorders. They are (from left to right) Drs. J. T. McCoy, Cedar Falls, F. M. Marquis, Waterloo, and E. R. Peterson and George Montgomery, Ames. The Iowa Heart Association and the S.U.I. Department of Internal Medicine sponsored the meeting in conjunction with the Iowa Clinical Medicine Society.

Emergency Treatment of Eye Injuries

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THE INITIAL treatment of eye injuries is usually given by someone other than an ophtalmologist. Therefore, it is well to ask all physicians to consider this medical problem. In some injuries the initial treatment determines whether the end result is to be useful vision or blindness. For purposes of discussion, eye injuries will be divided into four large groups: (1) foreign bodies, (2) abrasions and lacerations, (3) contusions and (4) burns.

FOREIGN BODIES

The most common eye injury is that produced by a moving particle that has hit the eye. In most cases the degree of permanent damage to the eye will be determined by the type of injury rather than by the treatment given, provided it is recognized that the eye has been damaged by a foreign body. It is surprising the number of times penetrating injuries to the eye by high-velocity small foreign bodies are overlooked. Failure to recognize an injury of this type is a consequence of the fact that there is very little pain and only minimal evidence of damage to the eye, especially when the penetration does not involve the axial portion of the eye. Injuries to the eye as the result of flying particles should be rare because safety lenses will protect the eye against penetration. The most important treatment is prevention of this type of injury by the distribution of safety information to all persons exposed to the hazard of flying foreign bodies.

The injuries to the eye produced by flying particles can be divided into four types in so far as management is concerned: (1) epithelial, (2) intracorneal, (3) anterior segment and (4) posterior segment (Figure 1).

Epithelial foreign bodies are the most common and are the result of low-velocity foreign bodies' becoming imbedded in the corneal epithelium. Removal of this type of foreign body is easy, and permanent damage rarely results. It is best to instill a local anesthetic drop and remove the foreign body with a moist cotton-tipped applicator. The instillation of a local sulfonamide or antibiotic drop is usually advised, but probably is unnecessary. An eye patch is not necessary.

Intracorneal foreign bodies present an entirely different problem. The corneal penetration may be slight or marked. One characteristic type of injury is that produced by a hot particle of metal (from a grinding wheel or from pounding on metal) that lodges on Bowman's membrane or anterior stroma. This type of foreign body must be removed by some type of dissecting instrument, and following removal of the foreign body, there may be a rust ring. The use of an instrument with a pointed edge (such as a hypodermic needle) is not desirable. At the time of the initial removal of the foreign body, the rust ring must also be removed. With care, there should be very little damage to the normal corneal tissue. Following the removal of the foreign body and rust ring, local antibiotics and a mild pressure dressing should be used. If the foreign body has been present for 24 hours or more, the use of five per cent homatropine will usually make the patient more comfortable. One should not use local anesthetic drops or ointments except for the foreign-body removal. Pain should be controlled by prescribing systemic analgesics. Demerol or codeine should be prescribed if needed. The patient should be instructed not to use his eyes, and if he is in a highly agitated state, sedatives should be given him. Unless one is certain of a cooperative patient, the eye should be examined within 24 hours to check the healing process and look for any evidence of infection.

A second type of intracorneal foreign body is a sliver particle of glass, metal, wood, etc. which was traveling at a moderate rate of speed when it hit the eye. This type of foreign body cuts its way into the tissue and is imbedded beneath Bowman's membrane within the corneal stroma. Removal of this type of foreign body is more difficult, the incidence of corneal infection is higher and the likelihood of permanent visual reduction is greater, especially when the foreign body or its track is in the visual area of the cornea. One of the difficulties presented in this type of injury is the accurate determination of the depth at which the foreign body lies and whether the anterior chamber has been penetrated. In order to determine accurately the depth of the foreign body, a slit-lamp examination is desirable. If the involved eye is softer than the fellow eye, one may be quite certain that the anterior chamber has been penetrated, regardless of the foreign body's position. In removal of the foreign bodies that lie beneath Bowman's membrane, care must be used to avoid excessive damage to the corneal stroma. If that happens, there will be a permanent scar.

Removal of these foreign bodies requires good

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local anesthesia and the correct instruments. If the foreign body is definitely within the corneal layers and appears to be rather deep, removal should not be undertaken unless there has been a careful slit-lamp examination. Following removal of the foreign body, the patient must be kept under close observation until healing is complete, because of the rather high incidence of stromal infection that may not appear for 48 to 72 hours. If an infection develops, early vigorous local and systemic antibiotic therapy will be necessary if permanent visual reduction or the loss of the eye is to be avoided.

Anterior segment foreign bodies are always serious and should be treated by individuals able to perform ophthalmic surgery. These foreign bodies have penetrated the eye and lie within the visible anterior segment (anterior chamber, iris or lens). Removal may be difficult and always requires opening the eye. The important clinical features of this type of injury are: (1) soft eye, (2) evidence of a corneal or scleral perforation, (3) blood in the anterior chamber, (4) distorted pupil and (5) visible foreign body in the anterior segment. All of the above features may not be present in every case.

Posterior segment foreign bodies are the most serious, and frequently result in loss of all useful vision, regardless of treatment. Late complications of cataract, hemorrhage, organized vitreous bands and retinal separations are common regardless of the skill of the person treating the case. The important clinical signs of a posterior-chamber foreign body are: (1) soft eye, (2) visible hole in the sclera or cornea, (3) anterior-chamber hemorrhage, (4) hole in the iris, (5) distorted pupil, (6) traumatic cataract, (7) vitreous hemorrhage, (8) retinal or choroidal edema or hemorrhage, and (9) visible foreign body. Not all of the above signs need be present to justify the diagnosis of intraocular foreign body. All such eyes should be treated by an ophthalmologist capable of performing ophthalmic surgery.

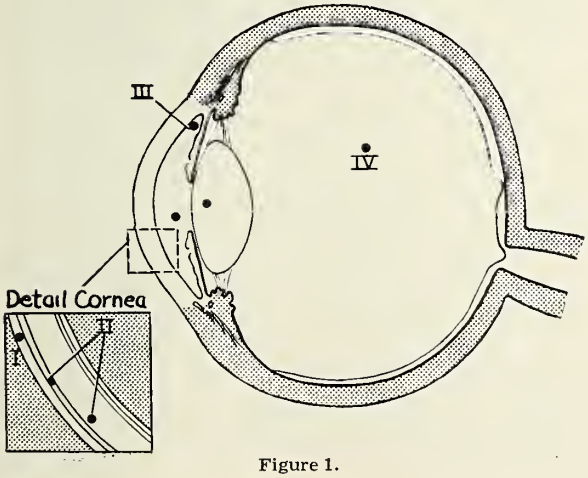


Figure 1.

Summary. Foreign bodies in the epithelium and Bowman's membrane can be successfully treated by any physician. Foreign bodies within the corneal stroma may be handled by any physician, but the hazard is considerably greater. All intraocular foreign bodies should be managed by one capable of performing intraocular surgery. Early referral of intraocular foreign bodies must take place if the best results are to be obtained. Whenever there has been a corneal or scleral perforation, avoid the use of ointments in the conjunctival sac, but rather, use antibiotic solutions immediately and when indicated, use antitoxin therapy. Whenever in doubt, be sure to obtain an x-ray for evidence of a foreign body.

ABRASIONS AND LACERATIONS

Superficial corneal abrasions are rarely serious, but may produce extreme discomfort for the patient. The most frequent causes of this type of injury are fingernails, newspapers and limbs of trees or shrubs. The basic pathology is loss of the corneal epithelium and exposure of an area of Bowman's membrane. If the defect is of any appreciable size, there will be severe pain and lacrimation. Secondary infections are unusual in corneal abrasions.

A frequent complicating feature is poor epithelial regeneration, producing the condition known as recurrent erosion. In recurrent erosion, there is a repeated breakdown of the epithelium in the injured area that may continue for a period of many months. The onset of the erosion usually takes place when the patient awakens in the morning, and it is characterized by a sudden, sharp pain, lacrimation and blurred vision. In order to reduce the frequency of this complication, adequate treatment of the initial abrasion is necessary.

If the abraded area is more than 2 mm. in length, the best results are obtained by a good corneal scrub on the initial visit. The eye should be well anesthetized with one of the local anesthetic agents. A toothpick tightly wound with cotton should be dipped into alcohol, tincture of iodine or ether, and the excess solution removed. The entire area of the corneal abrasion should be thoroughly scrubbed to remove foreign particles on Bowman's membrane, and equally important, all loose corneal epithelium must be removed. In all eyes, the epithelial defect after the above treatment will be considerably larger than the original defect, but subsequent healing will be more rapid. If folds of surface epithelium are left, one can be certain that recovery will be slow.

After removal of all loose epithelium, a liberal quantity of antibiotic ointment should be placed in the conjunctival sac. One should not use an

anesthetic ointment or drops for the pain. (Some ophthalmologists do not use ointments in these cases because they feel that oil droplets may be trapped beneath the epithelium, but my experience has been that this is an unusual complication.) A firm pressure dressing should be applied and not changed for at least 24 and in most cases 48 hours. The patient should be given systemic sedatives and analgesics, and advised not to use his eyes for at least 24 hours. The eye should be examined in 24 or 48 hours, and a pressure dressing used until the cornea has completely healed.

If the pupil becomes small, five per cent homatropine should be used at the time the dressings are changed. After the defect has healed, the use of an ointment at bed time for a period of two to four weeks appears to reduce the incidence of recurrent erosion.

Corneal lacerations produce a defect in the epithelium, Bowman's membrane and corneal stroma. There is always some degree of corneal scarring, and the danger of corneal infection is much greater than in corneal abrasions. This type of injury is usually the result of flying pieces of metal or glass, and it commonly is suffered by patients who have been in automobile accidents. The proper treatment is the removal of foreign material from the corneal track, but one must avoid excessive damage to the corneal stroma.

Before cleaning the corneal track, one must be certain that the laceration does not penetrate the entire corneal thickness. If there is a corneal perforation, the small particles may be washed or pushed into the anterior chamber, producing serious complications. The chief signs of perforation into the anterior chamber are: (1) soft eye, (2) shallow anterior chamber, (3) blood in the anterior chamber and (4) pupil distortion.

If the anterior chamber has been entered, the treatment should be performed by an ophthalmologist. If it has not been penetrated, the track should be cleaned of foreign particles and an antibiotic ointment applied. A firm pressure dressing will force the wound edges together without sutures and make the patient more comfortable. The eye should have a careful daily examination until it is completely healed, because of the danger of corneal infection in this type of injury. If the cornea in the region of the laceration becomes hazy, especially after 48 to 72 hours, one must consider the cornea infected, and intensive local and systemic antibiotic therapy must be started immediately.

Summary. Corneal abrasions and lacerations that do not penetrate the anterior chamber may be treated by any physician. Careful treatment of corneal abrasions is indicated to avoid the development of recurrent erosions. Corneal lacerations should be cleaned of foreign particles, and during the healing stage, regular observation for evidence of corneal infection is important.

CONTUSIONS

Contusion injuries to the globe are always serious, and the incidence of late complications is high. There are two basic clinical pictures found in contusion of the eye: contusion without hemorrhage, and contusion with hemorrhage into the anterior chamber, into the vitreous, or both. One of the complicating features is that the hemorrhage may not occur for several days after the injury. Therefore, although the prognosis in patients without hemorrhage into the eye at the time of the injury is better, one must reserve a good prognosis for at least three days.

If there is a contusion injury to the eye with no hemorrhage into the eye and no pupil distortion, the prognosis is good unless the eye is soft. No active treatment for the eye is indicated, but limited physical activity for three to seven days is probably advisable. There is no uniform agreement as to whether the pupil should be dilated at the time of the injury for careful fundus examination. My belief is that it is safe to wait three or four days before dilating the pupil, especially in eyes where there is some pupillary dilatation and sluggish response to light. One postpones dilating the pupil in order to avoid a marked change in the iris position that may produce a hemorrhage or precipitate glaucoma.

If there is a hemorrhage in the anterior chamber or vitreous at the time of the initial examination, one is faced with a dangerous eye that can deteriorate rapidly. The pressure in any eye with contusion is very important, for if the eye is mushy-soft, especially in the presence of hemorrhage and/or a deep anterior chamber, a perforation of the globe must be considered. If a perforation is observed or strongly suspected, surgery is indicated. If the tension is normal or slightly below normal, observation is safe. In the presence of hemorrhage, the pupil should not be dilated during the early course of the process because there is increased danger of glaucoma and because, with a dilated pupil, there is a reduced iris area for the absorption of blood.

If the pupil is widely dilated, the use of miotics (2 per cent pilocarpine) is probably advisable. In the vast majority of patients, it is best to use no medication. With hemorrhage, absolute rest is desirable, but not always possible. When one is treating children, bandaging the eyes may do more harm than good. Therefore, bandages need not be used. In the older age group, bandaging both eyes will usually help restrict activity. There is also a lack of agreement as to whether these patients should be hospitalized. In most cases the patient will do better at home, provided that the physician checks the patient at regular intervals and

provided there is a responsible person to look for complications.

The most dreaded complication is secondary glaucoma. In older children and adults, the development of glaucoma will be accompanied by severe pain, but in small children pain is rarely significant. Rather, the child becomes lethargic and will not eat. If the preceding symptoms develop, one must rule out the development of secondary glaucoma. If glaucoma develops, surgery may be necessary, and an ophthalmologist should be consulted.

There is no agreement as to whether Diamox should be used routinely in contusion injuries. My belief is that it is not indicated unless secondary glaucoma develops.

The late complications of contusion injuries are: (1) glaucoma, (2) pupil distortion with or without sphincter rupture, (3) cataract, (4) phthisis bulbi, (5) organized vitreous strands and (6) retinal separation.

Summary. All contusion injuries to the globe are potentially dangerous. If possible, these patients are best cared for by an ophthalmologist, for rapid deterioration of the eye may occur at any time. The most critical time is the first three to seven days. Poor prognostic signs are the development of hemorrhages or repeated hemorrhages and secondary glaucoma. During the first few days, rest and no medication usually will be the safest procedure. The pupil should not be dilated in the early period following injury, and when dilation is performed, it should first be obtained through the use of a short-acting mydriatic.

BURNS

There are four types of burns to the eye: (1) thermal, (2) radiation, (3) acid and (4) alkali.

Thermal burns are usually produced when the eye is touched by some hot object, but many occur following a flame blast in the face. As a rule, the prognosis in this type of burn is good, for heat has been in contact with the globe for only a short period. The cornea or conjunctiva will be white in the burned area, with rather severe pain, photophobia and lacrimation. Infection is rare, and consequently one does not need to use antibiotics. The eye should be examined carefully after the instillation of a local anesthetic, and the charred tissue—if any—should be removed. If there is only a white film on the cornea, do not attempt to remove it. An ophthalmic ointment that does not contain a local anesthetic should be placed in the cul-de-sac, and a moderate pressure dressing applied. Pain should be controlled by systemic medication. The dressing should be changed daily.

Radiation burns of the cornea are due to the ultraviolet wave lengths and produce what is known as actinic keratitis or snow-blindness. The ultraviolet waves destroy the corneal epithelium, producing multiple corneal abrasions. The cornea will have multiple areas of staining. There will be severe pain, photophobia and lacrimation, but permanent damage will rarely result. The treatment consists primarily in the control of pain until the corneal epithelium regenerates. The use of cold compresses will frequently make the patient more comfortable. Use systemic analgesics if necessary. The local use of anesthetic drops may make the condition worse and delay healing. Pressure dressings will add to the patient's comfort.

Acid burns of the cornea will produce varying degrees of damage depending upon the type of acid and the duration of the contact. The damage from acid burns takes place rapidly, producing extensive destruction in a matter of minutes. The successful treatment of an acid burn depends more upon what is done before the patient reaches the physician's care than upon what the physician does. Immediate prolonged irrigation with saline or tap water will save more eyes than will any known medication. The best treatment is continuous irrigation of the eye and conjunctival sac for at least 15 minutes. After liberal irrigation, the frequent use of a bland ointment (Ophthalmol every three hours) will usually be adequate. If there is much corneal or conjunctival damage, consultation should be requested in the early stages. Late complications are corneal scarring and the development of conjunctival granulomas.

Alkali burns are usually serious because of the late complications. As in acid burns, the most successful treatment is immediate, profuse irrigation of the eye with saline solution or tap water. This should be continued for 15 to 30 minutes. After this profuse irrigation, the involved tissue should be removed to prevent alkali from penetrating into the deeper tissues, if possible. If there are white areas on the conjunctiva and cornea, these should be removed because the alkali is fixed to this tissue and will continue to penetrate deeper for many days if the involved tissue is not removed. Following removal of the involved tissue, the liberal use of local ointment with cortisone is indicated. Care must be used to keep tissue adhesions separated. If at all possible, these patients should be under the care of an ophthalmologist.

Summary. Thermal and radiation burns to the eye are not, as a rule, serious, and they produce more discomfort than permanent damage. Treatment consists of the control of pain through systemic medications and minimal treatment to the eye itself. The disease process is usually self-limited. Acid and alkali burns are very serious, and the greatest hope for saving the vision of their victims lies in immediate, profuse irrigation of the eye. The treatment should be started at the place

of the accident and not delayed until a physician has been called. If there is any evidence of tissue damage other than hyperemia, it is probably advisable to have treatment directed by an ophthalmologist. Permanent damage is the rule, and frequently there is a legal problem in this type of burn.

COMMENTS

If there is one common error in the emergency treatment of eye injuries, it is that of doing too much rather than too little.

Any physician should be able to give adequate treatment for injuries resulting from foreign bodies of the epithelium, Bowman's membrane and anterior stroma. Deep stromal foreign bodies and all penetrating injuries should be treated by someone capable of performing ophthalmic surgery. If there is a perforation of the cornea, don't use ointments in the eye, but use antibiotic solution, apply a sterile dressing, give systemic antibiotics and seek immediate consultation. When in doubt, and in all patients with a suspicious history of trauma due to a flying particle, get x-rays of the orbit.

Abrasions and lacerations of the cornea, unless the globe has been penetrated, can safely be managed by any physician. In corneal lacerations, careful observation for infection is important.

Contusion injuries are serious and must be observed with care. If the contusion is accompanied by a hemorrhage in the eye, serious complications are not unusual. The important complication is glaucoma. In infants and small children, the development of glaucoma is characterized by lethargy and loss of appetite, whereas in older children and adults, pain and nausea are the rule. It is important to note the pressure in the eye immediately after the contusion, for if the eye is mushy, the probability is that there is a perforation of the globe. If possible, contusion injuries should be treated by an ophthalmologist.

Burns of the eye due to heat or radiation are usually self-limited and do not produce permanent damage. Acid and alkali burns are always serious. The greatest hope for minimal damage is immediate and profuse irrigation.

In the control of pain of ocular injuries, avoid the repeated use of local anesthetic agents in any form. Rather, prescribe systemic analgesics, narcotics and sedatives.

Syndromes of the Elongated Styloid Process

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MARSHALLTOWN

NEURALGIAS OF THE HEAD, face and neck often present a most enigmatic and obscure problem in diagnosis and treatment. The clinician is well aware that the etiologic possibilities are legion, and that he must make an accurate diagnosis in order to employ the best in therapy, whether it be medical or surgical. I wish to direct your attention to two syndromes of pain that may vary from a mild discomfort to a severe one closely resembling glossopharyngeal neuralgia. These syndromes are produced by an abnormal elongation of the styloid process of the temporal bone, and their relief requires surgical intervention. At times, because of the vagueness of the symptoms, one may be led astray into the diagnosis of a psychoneurosis or, with a more definite pain pattern, into the mistaken idea that the difficulty is a neuralgia, myalgia or vascular disturbance. No doubt most otologists are well informed of the symptomatology of this interesting clinical entity, but I feel that under the stress of a busy practice, each of us has a tendency to forget it from time to time.

EMBRYOLOGY

The styloid process develops from portions of the second branchial arch or cartilage of Reichert, and most anatomists distinguish four separate parts of it, the "stylohyoid chain."

1. The Tympanohyal grows downward from beside the periotic capsule and is eventually enclosed in the petrous portion of the temporal bone, and extends to the lower surface or beyond it. This forms the base of the styloid process.

2. The stylohyoid forms the major portion of the bony styloid process.

3. The ceratohyal is usually represented by the stylohyoid ligament or an ossification of the ligament.

4. The hypohyal forms the lesser cornu of the hyoid bone.

In early embryonic life, the stylohyoid chain extends downward and forward from the skull to meet its fellow of the opposite side, to which it is connected by a crosspiece, the basihyal, which becomes the body of the hyoid bone.[1]

DESCRIPTIVE ANATOMY

In past years, most instances of elongated or abnormal styloid processes were recorded by anatomists. As early as 1652, DeMarchettis observed, in his anatomical studies, ossification of the stylohyoid ligament.[2] The styloid emerges from the inferior aspect of the temporal bone and takes a forward, downward and inward direction, passing between the internal and external carotid arteries. Its average length is 2.5 to 3.0 cm. At times there may be a variation in its course, or there may be a rather marked inward projection near the tip—a hook-like process. This type of abnormality is frequently encountered in symptomatic elongated styloid processes. Behind its base and between it and the mastoid process is the stylomastoid foramen through which course the facial nerve and the stylomastoid artery. The extreme tip is usually cartilaginous. The process serves as the base for the origin of three muscles, the stylohyoidens, the styloglossus and the stylopharyngeus. In addition, three ligaments are attached to the tip: (1) the stylohyoid extends inferiorly, continuing the general direction of the process, to attach to the lesser cornu of the hyoid bone; (2) the stylomandibular extends from the anterior aspect of the tip to the posterior border of the mandible, between the insertion of the masseter muscle laterally and the internal pterygoid medially; and (3) the stylopharyngeal ligament, or alar fascia, extends medially to the pharyngeal wall.

TOPOGRAPHIC ANATOMY

The process, with its attachments, forms an important anatomical landmark, since it divides the para-pharyngeal or pharyngo-maxillary space into the pre- and post-styloid spaces. During the past decade, many reported observations have stressed the important clinical applications of such a two-space division in the diagnosis of and surgical approach to deep infections of the neck.

1. The pre-styloid space extends from the base of the skull as far as the greater cornu of the hyoid bone and the angle of the mandible. In cross-section, it is roughly triangular. The medial border is formed by the superior constrictor muscle, and the lateral border is formed by the internal pterygoid and a portion of the parotid gland. The posterior border is made up of the styloid process with its attached muscles and the stylopharyngeal ligament or alar fascia. The space is filled with loose connective tissue and contains no important structures except branches of the pharyngeal plexus of nerves.

2. The post-styloid space contains a neurovascular bundle consisting of the internal carotid artery, internal jugular vein, ascending pharyngeal artery, the glossopharyngeal, vagus, spinal accessory and hypoglossal nerves, and ganglia of the cervical sympathetic nerves.

ANATOMY—VARIATIONS AND PATHOGENESIS

The styloid, to produce abnormal symptoms, must have a length of 4.5 to 5.0 cm. and be displaced inward and forward to reach the area of the tonsil fossa. In most recorded accounts, the tip was found adjacent to or within the palatoglossal pillar of the tonsil fossa, although it may be found in the center or in relation to the posterior pillar. As long as the passive mobility of the process is preserved to such a degree as to prevent its interfering with movements of the adjacent structures, no symptoms will be produced. This mobility comes from the presence of loose, fibrous connective tissue between the four original embryonic divisions, forming a pseudo-joint, or it may be the consequence of extreme thinness of the process. With ossification of these pseudo-joints or an increase in the size of the process sufficient to make it a dense, bony rod, mobility is lost and various clinical syndromes appear.

Two theories have been propounded to explain the abnormal length of some of the processes. Eicken[3] concluded that secondary calcification and ossification of the stylohyoid ligament and adjoining parts occur in adult life, just as those same changes occur in other body structures with the passing of years. He had never observed an abnormally long process in a child. However, Loeser and Cardwell[4] reported palpating elongated processes during tonsillectomies in children. Stamm[5] feels it is a congenital anomaly representing a kind of atavism, since in some animals such as the dog, cat and pig the styloid apparatus is normally completely ossified. Secondary changes in the styloid chain, such as ossification and change in its position due to tension of tonsillar fossa scar tissue, contribute to the pathogenesis of symptoms.

GLOSSOPHARYNGEAL NERVE

The pain and discomfort produced by an elongated styloid are mostly mediated through the fibers of the glossopharyngeal nerve, and consequently a cursory knowledge of its ramifications is essential. It provides ordinary sensation to the pharynx, fauces and palatine tonsil, and it is the nerve of taste for the posterior portion of the tongue. After leaving the skull through the jugular foramen, the nerve passes forward between the internal jugular vein and internal carotid artery, and descends beneath the styloid process and muscles attached to it, to the lower border of the stylopharyngeus muscle. It then curves forward,

forming an arch lying on the stylopharyngeus and constrictor medius, passing to the region of the faucial tonsil. There it forms a plexus with pharyngeal branches of the vagus nerve and the sympathetic. One branch, the tympanic or Jacobson's nerve, supplies in part the middle ear cavity. There is a communication with the auricular branch of the vagus and another with the facial nerve. It is also connected indirectly with the trigeminal nerve. We shall note later that there may be extensions of pain beyond the sensory areas of the ninth nerve, representing overflow along these various connections.

REVIEW OF LITERATURE

Although anatomists were aware of the elongated styloid process for several centuries, it was not until 1870 that Lücke[6] recorded the first clinical case. Two years later, Weinlechner[7] observed a similar one. In this country, Sterling[8] exhibited a patient with a bony growth involving the tonsil before a group of American laryngologists in 1896. A number of years elapsed before Thigpen[9] (in 1932) presented three patients who had all been relieved by surgical removal of the styloid tip. In 1937, Eagle[10] recorded two cases, and in the ensuing years he has amassed a large series of patients. Fitz,[11] in 1940, continuing the work of Eagle, reported on 39 patients, on 11 of whom operations had been performed.

In 1948, Eagle[12] recorded an additional 211 cases, with 44 operations performed. He described a new symptom complex called the "carotid artery syndrome," in which the pain followed the distribution of the carotid artery, either external or internal. He pointed out that the styloid tip may point medially in an abnormal manner, causing pressure on the internal carotid artery, or may point laterally and impinge on the external carotid artery. Twelve patients presented symptoms of this syndrome, and one patient was operated on. In that case the tip of the styloid was found to be imbedded against the external carotid artery, restricting its lumen. Later, a second patient with this syndrome was relieved by surgery.[13]

In 1942, Loeser and Cardwell[4] called attention to a form of neuralgia closely resembling the glossopharyngeal type which was caused by an abnormal elongation of the styloid process, and reported five cases. One patient was operated upon by an external approach, and subsequently he had the opposite styloid excised. Wilson,[14] in 1946, demonstrated a patient with a typical glossopharyngeal neuralgia in which the main trigger point was in the right tonsil region and adjacent surface of the tongue. A trans-tonsilar section of the glossopharyngeal nerve was performed. Wilson commented that cases of glossopharyngeal neuralgia associated with an elongated styloid process do not need nerve section. Rather, only an inch or so of the styloid tip needs to be resected. Douglas[15] observed a patient with a elongated styloid who had a facial pain which radiated along the mandibular division of the fifth nerve. Hill,[16] in 1955, presented a general discussion of the condition.

SYMPTOMS

Only about 50 per cent of elongated styloids provoke symptoms. Occasionally they may be encountered during tonsillectomy, and it would be difficult to decide whether or not the clinical symptoms which gave indications for the tonsillectomy had any relationship with the styloid anomaly. In the typical pain syndrome, almost always a previous tonsillectomy has been done, and the symptoms frequently have appeared during convalescence. In some instances, however, an interval of several years may elapse. Lengthy postoperative pain should suggest the possibility of injury to the styloid tip at operation, or a displacement of the tip toward the tonsil fossa from the pull of the scar tissue. Occasionally, however, the tonsils are still present. From anatomical studies, it is evident that the major symptomatology is related to stimuli mediated through the glossopharyngeal nerve, or occasionally through the facial, vagus or trigeminal nerves. The pain patterns however, are not diagnostic.

A wide variety of symptoms may be present: (1) sensation of fullness in the throat, usually on only one side; (2) sensation of foreign body in the pharynx similar to that of a globus; and/or (3) pain or soreness in the region of the soft and hard palates. (4) In severe cases, the neuralgic pains may resemble that of a glossopharyngeal neuralgia, for there is pain on swallowing which radiates toward the ear and/or the larynx. The pain, however, is not so severe nor so lancinating. A diagnosis of idiopathic glossopharyngeal neuralgia cannot be made until the possibility of the presence of an elongated styloid has been eliminated by digital palpation and lateral roentgenograms. Loeser and Cardwell[4] state that "A long styloid forms the fixed blade of a double shearing motion because of its position between the prominent lateral process of the atlas and the angle of the mandible. Rotation of the head or opening the jaw may be the mechanical cause of irritation of the adjacent glossopharyngeal nerve. This nerve, for a short distance below its exit, until it enters the lingual musculature, is in intimate relation with the styloid and its attachments. Variations occur in the shape and length of the jaw and position of the lateral process of atlas in relationship to the long styloid. These variations may determine the presence or absence of clinical symptoms. Another factor which may be of importance is the presence or absence of articulations in the styloid process. Occasionally there are three segments present, and it is the segmental

styloid that probably does not produce symptoms, whereas the non-segmental or stiff styloid would."

There are other symptoms that can occur either singly or in combination: (1) occasional pain distribution beyond the ninth nerve into the malar area, shoulder, forehead and lower jaw; (2) pain on excursions of the jaw on chewing; (3) difficulty in swallowing, suggesting a psychoneurosis (Stamm[5] recorded a case where the styloid encroached on one pyriform sinus, producing a partial obliteration of the sinus); (4) increased salivation; (5) constant pain or nagging sensation in the pharynx; (6) pain initiated by intake of hot or cold food or drink, or sometimes by movements of the tongue; (7) spasm or constriction of constrictor muscles of the esophagus and pharynx; and (8) alteration in the sensation of taste. From this lengthy enumeration it is apparent that a symptomatic elongated styloid can mimic a wide variety of conditions.

Styloid Process—Carotid Artery Syndrome

After observing a large number of elongated-styloid cases, Eagle[12] concluded that in a few instances the symptoms were produced by impingement of the styloid tip on the internal or external carotid artery. He stated that any styloid, especially an elongated one, whose tip deviates medially or laterally may cause pressure on the artery, not only impairing the function of the vessel by diminishing its calibre but also producing irritation of the sympathetic nerve fibers which accompany the artery. One will find tenderness over the vascular sheath of the neck, and pressure on the involved artery will cause pain along the vessel. He further postulated that with involvement of the internal carotid artery there will be parietal headaches and head pain throughout the distribution of the ophthalmic artery, but little or no pain below the eye. External carotid involvement will produce pains below the level of the eye. Thus, Eagle feels that possibly some cases of migraine headache or other vascular headaches may be due to styloid pressure. This is a very interesting proposition, and one that is beset with numerous possibilities. Thus, it may be well for one to ascertain the presence or absence of an elongated styloid in patients with histamine cephalgia or other vascular disorders. I have not personally observed such a patient, but I should think that even in the presence of an elongated styloid it would be difficult to incriminate it definitely as the sole cause of symptoms.

In addition, Eagle mentions that a pulsatile tinnitus may occasionally be present in the stylocarotid syndrome, and that it is aggravated by pressure on the styloid, but those phenomena would be difficult to explain on a vascular basis, since the cochlea is supplied from a branch of the vertebral artery, and not the carotid. I should suggest that such a pulsatile noise may still be a vascular transmission upwards through the internal carotid which traverses the temporal bone, or along branches of the external carotid such as the superficial temporal or the posterior auricular and its stylomastoid branch. Puzzling cases of pulsatile tinnitus are encountered occasionally, and are usually relegated to the category of the unexplainable. Thus, possibly, the elongated styloid may occasionally provide the explanation for this annoying condition.

Diagnosis and Differential Diagnosis

A carefully taken history is important since there are no typical symptoms, but rather a wide variety of sensations ranging from a pressure suggesting a foreign body in the throat, to a localized sore throat, and to various degrees of neuralgiform pains radiating to the hypopharynx, larynx, shoulder, face, ear, and the parietal and eye areas. Inspection of the pharynx usually does not reveal the presence of the styloid, although occasionally one may visualize an elevation in the region of the tonsil. Digital palpation is necessary in order to ascertain the presence of the styloid tip and then to reproduce the patient's symptoms in some degree. In an occasional patient, the tonsils may be present, and in some cases accurate palpation is then difficult. The type of styloid tip that does not project into the tonsil fossa but is located more laterally can be mistaken on palpation for the posterior end of the mandible. A styloid of normal length is never palpable. Occasionally, a very long styloid will impinge on the pyriform sinus, and consequently a careful lower pharyngoscopy should be done.

Roentgenograms are essential for diagnosis and confirmation. One should have postero-anterior views to show the degree and type of projection. A lateral view is essential for visualization of the length, and for an indication of the length of the portion that will have to be removed surgically. If the process is segmental, the line of articulation may easily be confused with a fracture of the styloid. From a survey of recorded cases, there appears to be a preponderance of the condition in female patients.

Because of the wide variety of symptoms that are encountered, the possibilities in differential diagnosis are many. One should consider (1) foreign body in the pharynx; (2) temporomandibular joint syndrome; (3) tumor anywhere in the pharynx; (4) unerupted and impacted third molar tooth; (5) globus hystericus; (6) various types of vascular pain; (7) glossopharyngeal neuralgia; (8) myalgia; (9) arthritis of the cervical spine; and (10) disease of the central nervous system or base of the skull, with pain referred to the area.

TREATMENT

Surgical intervention is essential for the relief of the symptoms. Digital fracture outwards has been attempted, but affords no cure. Occasionally, massage has been used to free the tip from adhesions, but this could be of value only if the tip were straight and did not project into the fossa.

The styloid process can be approached surgically by the external or intraoral routes, the intraoral approach being preferable. In certain cases, however, the external operation may be indicated because of the more lateral position of the process or, possibly, because the process impinges on one of the carotid arteries. An incision is made along the anterior border of the sternocleidomastoid muscle through the deep fascia. The contents of the carotid sheath are displaced posteriorly to expose the styloid. Then, the styloid is stripped of the attached muscles and ligaments, and the required amount is removed.

The intraoral route is much simpler. The patient has the usual preoperative preparation. Local anesthesia usually suffices, but some surgeons prefer general anesthesia. The area is infiltrated with novocaine, and a short vertical incision is made through the overlying mucosa. The constrictor muscle and pharyngeal aponeurosis are split vertically, exposing the styloid tip. The stylohyoid ligament is severed, and the tip is stripped of its muscular and ligamentous attachments as far as is necessary. This can easily be accomplished by means of a ring curette, and all the attachments must be thoroughly stripped from the section that is to be removed, since the remainder of the styloid becomes a fragment and may be pulled out of sight if any muscle is still adherent. Extreme care should be taken so as not to fracture the process. The tip is grasped with a hemostat and severed with a small, sharp bone forceps. One should be sure to remove the necessary amount in one piece, since the remainder of the styloid becomes buried in the surrounding tissue and reexposure is quite difficult. The wound is closed with plain 0 catgut. Bleeding is very minimal. It is probably advisable to give a prophylactic antibiotic for a few days, but the postoperative reaction is mild in most instances, and the patient can usually leave the hospital after a day or so. When the tonsils are still present, a tonsillectomy must necessarily precede removal of the styloid tip.

CASES

Case 1, a 56-year-old woman, was first observed in October, 1951, when her complaint was a dull pain in the right neck which had bothered her for six months. It was located adjacent to the angle of the mandible and extended upward to the ear and downward toward the laryngeal area. The severity of the discomfort was variable, and there were periods of almost complete relief. Before coming to me she had consulted several other physicians, and they had entertained a variety of diagnoses such as cervical arthritis, atypical myalgia and tension syndrome, for which they prescribed a variety of drugs ranging from antibiotics to analgesics and tranquilizers. Very little relief had resulted from this variety of drugs.

The past medical history was non-contributory, except for a tonsillectomy 20 years previously. Examination revealed only tenderness in the right neck adjacent to the angle of the mandible. Palpation of the tonsil fossae revealed bilateral elongated styloid processes. Pressure over the right process reproduced the pain but pressure over the left process evoked no more than slight discomfort. Roentgen rays confirmed the presence of bilateral elongated styloid processes.

Excision of the right process, under local anesthesia, was performed uneventfully. This procedure afforded complete relief from the discomfort, but eight months later the patient again consulted me for pains in the left neck, similar to the previous ones on the right side, yet less severe. Examination elicited tenderness below the angle of the left mandible and pain on intraoral pressure over the styloid. Since the symptoms were less severe than with the first episode, a regimen of vasodilators and heat was instituted, but with no relief. Subsequently the patient was hospitalized, and a portion of the left styloid was removed. The pains were then relieved. In a letter that she wrote me recently, she stated that she has had no further discomfort.

Case 2, a 63-year-old woman, consulted me first in 1953 because of a variety of pains in the neck which were more severe on the right side than on the left. A diagnosis of cervical arthritis had been made previously, and the patient had received various analgesics, heat, etc., with partial relief, but she continued to have pain in the right neck. The tonsils had been removed about 15 years previously.

Palpation revealed a diffuse muscle tenderness throughout the entire neck, but maximum tenderness existed in the right lateral hyoid area. Intraoral palpation revealed an elongated right styloid process that turned sharply into the anterior region of the right tonsil fossa. Pressure produced considerable discomfort. Because of the diagnosis of cervical arthritis, cortisone was prescribed, plus the usual anti-arthritic measures.

After a few weeks, the patient appeared but little improved. She was therefore hospitalized for excision of the right styloid process. Roentgen rays confirmed the presence of the elongated styloid. About 2.5 cm. of the styloid was removed uneventfully, and she left the hospital two days later.

After the operative reaction had subsided, the

patient had considerable relief from the severe pain in the right neck, but continued to experience muscle tenderness. She was then given histamine by injection and sublingually, with much improvement.

Case 3, likewise a woman, first consulted me in 1954 because of recurring tonsillar infections, and a few weeks later a tonsillectomy was performed. Postoperative convalescence was uneventful.

About six months later, her family physician referred her with the diagnosis of a possible abscess above the right tonsil fossa. She had had discomfort in the right tonsil region about three weeks previously, and her physician had found a swelling in the upper pole of the right tonsil fossa. Various antibiotics had been administered, but the pain and swelling had persisted. Initial examination revealed a small elevation in the upper pole of the right tonsil fossa, and the mucosa was reddened in this area. Palpation revealed a sharp, hard projection, apparently just underneath the mucosa, and pressure produced some pain. Excision of the elongated styloid was advised, and on the following day it was performed uneventfully. Following the usual postoperative discomfort, the patient was completely relieved of the pain.

SUMMARY

The symptomatic elongated styloid process is a definite clinical entity and is probably more common than one might think. A wide variety of symptoms may be produced, varying from a mild discomfort to severe neuralgiform pain in the neck, throat, ear, face and head, and the clinical features may mimic many disease processes. Two definite pain syndromes have been described—the typical and the stylocarotid. Intraoral palpation should become a part of our diagnostic procedures, and particularly it should be done in all patients who present complaints of pain in the head and neck.

The only treatment is surgical excision of part of the styloid, and it can easily be accomplished by the intraoral approach.

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Figure 1. Case 1. Bilateral elongated styloid processes, postero-anterior view.



Figure 2. Case 2. Right elongated styloid process, lateral view.

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The Treatment of Phlebitis

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THROMBOPHLEBITIS IS A disease with such a variable and unpredictable course that there is a disagreement among the experts on almost every phase of it. The incidence is different from one clinic to another, and even from time to time within the same clinic. DeBakey,[9] in his comprehensive evaluation, brings out this point and, in addition, emphasizes the protean clinical and pathologic manifestations of the disease, the contradictions and inconsistencies in its pathogenesis, and the conflicting ideas that physicians have about its prophylaxis and treatment.

In much of the literature it is recognized that vigorous measures have failed to affect the constancy of the mortality rate from pulmonary embolism. This has been ascribed[1,10] to the lowering of death rates from other causes, to the fact that greater numbers of aged and desperately ill patients are taken to surgery, and to the fact that there has been an increase in the number of major operations, such as for the repair of heart lesions and the removal of cancer. In line with this reasoning, I believe that constant effort to prevent and treat this disease will continue to save lives, decrease morbidity and prevent distressing sequelae.

PROPHYLACTIC TREATMENT

Even though statistical evaluation is difficult, I am convinced that prophylactic measures will decrease the number of thromboses. The first things we must do are to maintain good general surgical practices, including minimal trauma to tissues, prevention of shock and hypotension through adequate replacement of blood, adequate hydration, prevention of electrolyte imbalance, avoidance of too heavy sedation and avoidance of increased abdominal tension. Deep-breathing exercises not only are good for respiration but accelerate the venous return. Special care in preventing damage to blood vessels includes correct positioning on the table and banning of any kind of pressure behind the knees. Wrapping the legs carefully with elastic bandages from the toes to the knees will decrease stasis, especially in the presence of varicose veins. Elevation of the foot of the bed helps increase the rate of venous return. Active and passive exercises are important, and a cooperative patient will start wriggling his toes almost as soon as he wakens. Careful attention to exercise is, in my observation, too often neglected, and in consequence I have learned to insist on the patient's moving his feet and legs every time I make rounds. Early ambulation should be carried out. Too often the aide will get the patient out of bed on the first postoperative day only to sit in a chair while she makes his bed. This has little therapeutic value, and I insist on the patient's actually walking, if only a stationary walk. When the patient is tired, he should be put back in bed.

Specific prophylaxis is recommended when there is a history of previous thrombophlebitis or embolism. It may be used when there is assumed to be considerable risk, as with advanced age, varicose veins, traumatic procedures, cardiac disease, splenectomy or malignancy. Ravdin and Kirby[27] feel that prevention of embolic deaths will come only as a result of mass prophylaxis with anticoagulants, and several large series[3,5,12,17,31] have shown good results. Ochsner[22] believes that such prophylaxis may carry more risk than the disease itself. Prophylactic ligation of the superficial femoral vein, as advocated by Allen,[2] may be done in certain cases where the risk of hemorrhage and the risk of embolism are both great.

EARLY DIAGNOSIS

Early treatment hastens recovery and minimizes disabling postphlebitic changes.[1,3,6,17] Thus, an early diagnosis is essential. Bedfast and postoperative patients should be checked daily for any suspicion of calf-tenderness. This checking involves flexing the knee and palpating the relaxed triceps surae gently against the bone. Homans' sign of pain in the calf with dorsiflexion of the foot is usually not positive so soon. Signs of edema, venous engorgement, tenderness over the femoral vessels—all these are sometimes useful, but usual-

ly they indicate more advanced disease. Frequently, patients complain of pain in the calf muscles as the first indication of trouble. I am particularly careful of any patient with varicose veins, when there is an unexplained rise in pulse or temperature, or a history of phlebitis, even though only a minor procedure has been performed. Small pulmonary emboli will often give only minor or bizarre symptoms such as indefinite pain in the chest, transient weakness or fainting, unexplained cough, tachycardia, fever or mental confusion.

Muscle strain that develops from walking without accustomed heels will produce a tenderness that is difficult, if not impossible, to distinguish from early phlebitis. Lowenberg's test[21] of putting a blood-pressure cuff around the calf and slowly inflating it may be useful. If the patient complains of pain, and noticeably winces or withdraws when the cuff has been inflated to a pressure of from 60 to 150 mm. Hg., the test is regarded as positive. Normally, there is no pain at pressures below 180 mm. Hg. Another test[25] that may be useful consists of putting the cuff around the thigh, inflating to 40 mm. Hg. and waiting five minutes. If venous inflammation is present, pain will appear as the veins become distended.

MODALITIES OF TREATMENT

The time-honored methods of treating phlebitis still have their place, but they are now no more than an adjunct to more modern technics, for they do not prevent further extension of the thrombotic process. Bed rest should be enforced until all signs of disease activity have disappeared. The foot of the bed should be elevated between four and six inches until all swelling is gone. Heat, applied as hot, wet packs or by means of a heat cradle, reduces the pain and hastens the healing process, but it is not effective in arresting the course of the disease. Pressure bandages should be used to decrease or prevent edema, prevent stasis and increase the velocity of blood flow. Heat applied to the abdomen and administration of drugs such as papaverine will help to relieve vasospasm, when it is a feature of the disease.

SURGERY

In the treatment of thrombophlebitis, ligation of veins has been advocated, particularly by Allen and Linton.[1,2,20] The idea is to prevent the spread of the thrombotic process above the point of ligation, and especially to prevent embolization. Ochsner and his co-workers[22,23,24] believe that this is the only logical method of controlling "phlebothrombosis." When the process is localized to the lower leg, the superficial femoral is ligated at the junction with the deep femoral. Allen[2] feels that this can be done under local anesthesia in about 20 or 30 minutes for each side. At the time of division, he recommends that the clot, if present, be removed from the distal vein and even, at times, from the proximal vein. However, if the clot extends above and is fixed, it is necessary to go higher.

Ligature of the common femoral is not satisfactory because of poor collaterals, and may lead to dangerous engorgement of the leg. Allen uses ligature of the common iliac only when there is obvious, long-standing deep thrombosis extending into the iliacs. Ligature of the vena cava should be reserved for special cases where other measures have not been satisfactory. It can be done extraperitoneally, or through the peritoneal cavity when there is associated intra-abdominal pathology.

There are several advantages in surgical ligation: (1) it prevents emboli; (2) it carries little risk; (3) it can be used when other methods are contraindicated; (4) it needs no laboratory controls; (5) it can be followed by almost immediate ambulation; and (6) it ameliorates the course of the phlebitis. Yet, there are an almost equal number of drawbacks: (1) it is not a sure preventive, for embolism may come from another source; (2) it does require additional surgery in an already sick patient, and the procedure may not be so simple as it seems; (3) it may damage circulatory return, especially if the common femoral is ligated; (4) it may interrupt lymphatics as well as veins; and (5) it does not stop the phlebitic process, and other measures may need to be used with it.[14]

TREATMENT THROUGH ALTERATION OF BLOOD FACTORS

At the present time, heparin is the only available and safe coagulation inhibitor. It acts by preventing conversion of prothrombin to thrombin and by combining with serum albumin to form a strong antithrombin.[18] It has an almost immediate action and lasts only about three hours, but it is expensive and must be given parenterally. Control of heparin administration by use of the Lee-White coagulation time is advisable. This time is normally between 9 and 15 minutes, and sufficient heparin should be given to increase it to somewhere between 30 and 45 minutes (three to five times normal). Capillary clotting time is not reliable. Protamine can be used to reverse the action of heparin.

For continuous intravenous infusion, 100 to 200 mg. of heparin is dissolved in a liter of physiologic saline or five per cent dextrose in distilled water. The infusion should be started at 15 to 25 drops per minute, and the coagulation time should be checked after 15 or 20 minutes. Thereafter, the dose should be adjusted as needed, and rechecked. Once the correct dose has been found, the coagulation time can be maintained by daily checks. A

plastic cannula inserted in the vein will minimize reaction and allow the patient more freedom of motion than he might otherwise have. However, this method does require almost continuous supervision, and the patient almost invariably ends up with a periphlebitis after a few days.

Intravenous heparin has been given intermittently in a large series of cases[6,17] without laboratory controls unless renal damage was present. Usually, 300-500 mg. per day is given, divided into four doses, with the first and last larger than the middle two. The long period over night does not interfere with the good results. However, Barker[5] and Zimmerman,[32] in this country, prefer 50 mg. every four hours. As can readily be appreciated, this method requires trained personnel, to say nothing of good veins in the patient.

Loewe[18] gives 300-400 mg. of heparin in gelatin-dextrose menstruum subcutaneously and follows the coagulation times. He has found that this dosage needs to be repeated only about every other day, although some patients require more. Evans[10] gives 200 mg. of the same preparation at first, and checks the coagulation time in one hour. If it is unsatisfactory, he then gives 100 mg. of heparin intravenously. Thereafter, he is usually able to get a therapeutic response from 200 mg. every 12 hours. Hematomas, erythema and tender infiltration have been reported in one fourth of these patients.[28] If the drug is given intramuscularly instead of subcutaneously, there is danger of hematoma and it will be too rapidly absorbed. Ice packs will slow the rate of absorption.

Heparin therapy should be given for four or five days as prophylaxis, and for 10 to 14 days as treatment of thrombosis, but for three to four weeks when there is a complicating embolism. It is very important to have these patients up and about before discontinuing treatment. Slight hemorrhage will occur in one or two per cent, but this can easily be controlled with 50-100 mg. of intravenous protamine. Hidden, deep hemorrhage can be serious, and Barker[5] feels that there is a little more risk of bleeding with heparin than with coumarin drugs.

Contraindications to heparin therapy are hemorrhagic blood dyscrasias; ascorbic acid deficiency or increased capillary fragility; recent operations on the brain or the spinal cord, or recent intracranial hemorrhage; and the presence of open ulcerations, raw surfaces or wounds.

Dicumarol and related drugs act to decrease blood coagulation factors, especially Factor VII (proconvertin or co-thromboplastin) and prothombin, and act to depress thromboplastin formation.[7] They have been described as more effective than heparin in preventing thromboses, although they also give increased capillary fragility. Apparently they not only prevent the formation of clots but aid in their disintegration by allowing unimpeded action to the natural thrombolytic agents.[30] Experimentally, they have been found to aid in the recanalization of blood vessels.[26] The effectiveness of the drugs is measured by the prothrombin time, even though the test is not strictly a measure of the prothrombin present in the blood.

Dicumarol is the most familiar member of this family of compounds. It has a peak effect in two days and wears off in four days. Tromexan is used because it has a peak effect in one day, and the effect is gone in two days. Warfarin has a peak effect in two or three days and recovery in five or six. Cyclocoumarol, phenindione and Dipaxin, among others, have been used clinically and are effective, but the search goes on for a safer and more easily controlled drug. None of those presently in use can be standardized as regards dosage, and each of them must have reliable laboratory control.

It has been established[3,5] that optimum levels of prothrombin time are 1½ to 3 times normal corresponding to the prothrombin times of 30 to 10 per cent dilution of normal plasma. The blood prothrombin time should be determined before therapy is started and should be continued daily until the dosage remains constant and the therapeutic effect is satisfactory. Afterwards, levels may be checked at semi-weekly or longer intervals. The recommended dose of Dicumarol is 300 mg. the first day, 200 mg. the second day and 25 to 150 mg. daily thereafter. Tromexan is given 1,500-1,800 mg. the first day and 300-900 mg. daily in divided doses thereafter for the best effect. Warfarin sodium may be given intravenously, intramuscularly or orally, with 50-100 mg. (roughly 1 mg./K.) as the initial dose, and about 12.5 mg. per day as the maintenance dose.

Prophylaxis with coumarin compounds should start 48 hours after surgery and continue for seven to 10 days. Treatment of phlebitis is usually continued for two to four weeks, and after embolism it is continued for periods of four to six weeks. According to Barker,[5] there is less risk of bleeding during the first week of treatment than later, and he reports bleeding in less than one per cent, except when therapy was started less than 48 hours after surgery, in which cases the incidence was three per cent. He considered microscopic hematuria, slight epistaxis and occasional ecchymosis at the site of venipuncture as minor and insignificant. If there is significant bleeding or if emergency surgery becomes necessary, one can give 250 to 500 mg. of K_1 emulsion orally or intravenously. This dose will show some effect in four hours, and the bleeding tendency usually will be controlled in eight hours. Major surgery can be done as early as two hours afterward.[8] If necessary, transfusions are given before the K_1 becomes effective. If doses larger than 250 mg. are used, the patient will become refractory to the

effects of the coumarin compounds, and clotting tendencies must be controlled with heparin.

Contraindications to this treatment are similar to those for heparin. Anticoagulants should not be used where there is a blood dyscrasia with tendency to bleed, any purpuric state, hepatic or renal insufficiency, or a risk of local bleeding, as after recent surgery, during pregnancy or in the presence of open wounds or ulcerations. Nutritional deficiencies, gastrointestinal disease or recent gastrointestinal surgery may favor an exaggerated response, and only two-thirds of the usual dose is given under such circumstances.

The control of thrombosis through an increase in the thrombolytic process seems logical. Streptokinase will act to lyse clots formed in the body, but it is not the natural lytic agent. Trypsin acts to convert the precursor to active fibrinolysin. Although it can act directly, it does not do so because of the presence of naturally occuring antitryptic substances.[4] Several authors[11,15,16,29] have reported good results with intravenous or intramuscular trypsin, and only mild, temporary reactions. Others[13,30] have not been able to get satisfactory experimental or clinical evidence of benefit. Serious reactions may occur, and this method has not gained acceptance. Intramuscular trypsin is given in decreasing doses starting with 2.5 to 5 mg., deep intramuscularly, from one to four times a day. Streptokinase is given in 500-1,000-unit doses in much the same way.

There is little danger of general effects with this dosage except in allergic individuals. They should be used with caution in patients who have an abnormality of the clotting mechanism or severe liver damage.

Sympathetic block has been strongly advocated by Ochsner and his associates[22,23,24] for the treatment of thrombophlebitis, which they define as that form of the disease characterized by pain due to vasospasm, edema, often white skin, fever and clot firmly fixed to the wall. Procaine is injected into the sympathetic ganglia of the lumbar area, producing a block of the vasospastic impulses and leading to dilatation of the vessels of the lower extremity. In these cases the relief of pain and improvement of circulation may be dramatic. The inflammatory process in the vein will be improved and convalescence hastened. Block is done daily for seven to 10 days, along with the maintenance of compression bandages, active motion and ambulation. This method must not be used in conjunction with anticoagulant therapy because of the danger of deep hemorrhage.

Because of the variability of the disease, many other methods of treatment have been advocated, but have not gained general acceptance. These include alpha-tocopheral, Butazolidin, vitamin C, vitamin P, hydrocortisone and leeches.

RECOMMENDATIONS

There is considerable agreement throughout the leading clinics as to the general prophylactic measures and the conservative adjuncts to treatment, but there are wide variations among the results obtained with the specific measures that have become the essential part of modern therapy. Because of the nature of the disease, there can be no set pattern, and each patient is treated as a separate problem. Each physician must treat these patients in the proper perspective as regards his own experience and ability, and as regards the facilities available to him. I shall try to chart a course, but I wish to emphasize that there are reasons for deviating from it.

Whenever there is a history of previous thrombosis or embolism, Dicumarol, preferably, or heparin should be started 48 hours after any major procedure or when the patient will be in bed for longer than 24 hours. When superficial varicosities are present, the channels should be emptied by means of compression bandages, and high saphenous ligation should be done whenever feasible. In certain selected cases where the danger of hemorrhage and the danger of embolism are both great, superficial femoral ligation should be done bilaterally.

Superficial phlebitis such as commonly follows venipuncture usually can be treated by means of hot packs, but if there is a tendency to spread, anticoagulants should be started. Superficial phlebitis that occurs in varicose veins has little tendency to spread.[19] I know that many cases have been ignored with no ill effects. Indeed the circulation may be benefitted by the block in the vein. However, I remember one day when the coroner called to ask me about a patient who had resisted my advice to have her veins fixed. The patient had died of an embolism arising in a superficial varix. Definitive treatment of such a process should be done as soon as feasible, and the patient should have a proximal (usually high saphenous) ligation. Stripping the involved vein can be done if there is no infection and if the stripper can be pushed through the area. Anticoagulants and thrombolytic agents are not so satisfactory.

In deep thrombophlebitis, the primary treatment should consist of anticoagulant drugs. These will stop the thrombotic process most effectively all over the body. They provide the maximum protection from the post-phlebitic state with minimum damage to the vessels and lymphatics. They give protection against embolism at least as great as any other method, and the dangers are not great when adequately controlled.

In acute thrombophlebitis or embolism, blood should be drawn for a prothrombin-time measurement. Intravenous heparin should be given at once, with dosage of 50 to 100 mg. initially, and continuation doses of 50 mg. every four hours

until the coumarin drugs are effective. At the start, 1,200 mg. of tromexan and 300 mg. of dicoumarol are given. Blood for the daily prothrombin times is drawn three or four hours after the administration of the last dose of heparin. Dicoumarol in doses of 50 to 150 mg. is given daily to maintain a prothrombin time between 1½ and 3 times normal. It is necessary that one learn to anticipate the swings of the curve of activity and give the dosage accordingly.

The patient is put to bed with the foot of the bed elevated. Hot packs are used intermittently to relieve spasm and pain until those discomforts are gone. If no septic reaction is present, any febrile reaction will usually subside rapidly without the use of antibiotics. The patient is kept in bed until tenderness is gone and the blood prothrombin time has remained within therapeutic limits for at least 48 hours, and then progressive ambulation with support is started. Compression bandages should always be carefully applied from the toes to the knees. Routinely, a rubber reenforced elastic bandage is sufficient when wrapped tightly about the foot and, with decreasing firmness, about the leg. Sometimes two such bandages are needed, or even a rubber Esmarck bandage. All bandages should be discarded promptly when they have lost their elasticity. Elastic stockings are suitable later on in the convalescence. At least four weeks after the onset, the support is gradually discarded, if edema remains absent. As soon as patients have been stabilized on the correct dosage of drug and ambulant, they may be safely dismissed and carried on treatment at home, with twice weekly checks on the blood. If long-term therapy is necessary, this frequency may gradually be decreased, but the checking must be done no less often than once in two weeks.

At times I have omitted the heparin in borderline cases in favor of the other drugs. Occasionally there has been a slight progression of the disease, but on the whole, the results have been satisfactory. If the physician treats these patients while he is still trying to make up his mind about definitive therapy, then emergency treatment is less apt to be necessary.

It is important that prothrombin-time determinations be made by an experienced technician who is doing a fair volume of them. For this reason, coumarin therapy is restricted to localities in which fairly large laboratory services are available. If only limited laboratory tests can be done, one should use heparin, for the Lee-White coagulation method is easier and more reliable. Long-acting depot heparin in doses of 200 to 300 mg. is given. The coagulation time should be checked after two hours, and if it is not over 30 minutes, 100 mg. of heparin should be given intravenously. The dose should be repeated every 12 to 24 hours, and tests should be taken often enough so that the physician can be sure that adequate levels are being maintained. One can get a false sense of security altogether too easily if he orders that a shot be given every 12 hours. One must be sure that the medication is given subcutaneously, even though deep. This treatment should be continued until all pain and tenderness are gone and until the patient is up and about, with his elastic bandages. I have found it very difficult to keep continuous heparin therapy going for longer than three or four days because of the technical difficulties involved, but where there is a large resident staff, continuous therapy will work as well as the intermittent intravenous method.

I have used intramuscular trypsin and streptolysin as adjuncts to other methods of treatment when resolution of the inflammatory process was delayed or where anticoagulants were contraindicated. They may have helped, but the results were not dramatic. This therapy has not been useful in preventing spread of the disease.

When anticoagulants are contraindicated, where no laboratory facilities are available or where the physician is inexperienced in the use of anticoagulants but is competent in surgery, then ligation is preferable. Ligation of the superficial femoral should be done at the junction with the deep femoral vessel. If the process is far advanced, then ligation of the vena cava is the treatment of choice. Following ligation, it is very important to maintain the conservative measures such as elevation, compression bandages and progressive ambulation. Patients should be watched carefully for edema and allowed to remain up only as long as they are free from swelling.

In the presence of septic thrombophlebitis, all cases should have proximal ligation, for they do not respond well to anticoagulants. Antibiotics are also given.

I have not used lumbar block, although I can see why it will be useful in selected cases, especially in conjunction with ligation. The relaxants such as papaverine and heat to the abdomen will also allay vasospasm.

SUMMARY

Every physician must be alert to the early signs of phlebitis if he is to be sure of preventing unfortunate complications. Treatment should be instituted on suspicion of the disease. Considerable judgment must be used in treating this disease, and although I prefer anticoagulant therapy with coumarin drugs, heparin and surgical ligation are also good. The situation and the patient should form the basis for a choice of treatment method.

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Pitfalls in the Care of Cardiovascular Patients

The numerous pitfalls in the rehabilitation of a patient who has had a heart attack or breakdown of blood vessels were outlined on October 29 at a symposium sponsored by the Postgraduate Division of Stuyvesant Polyclinic and the American College of Angiology at the New York Academy of Medicine.

These pitfalls include: (1) a common tendency of physicians to treat the disease, rather than the patient; (2) the failure to recognize the value of long-term anticoagulant therapy; (3) the failure to evaluate adequately the serious hazards resulting either from constipation or, in the absence of constipation, from straining at stool; (4) failure to recognize the psychologic stress imposed on the patient by business or interpersonal relationships; (5) failure to realize that a patient who has undergone cardiac surgery may suffer various side-effects, including constipation, as a result of anesthesia or pain-killing drugs; and (6) the dangers arising from mistakes in diagnosis, as between cardiovascular and gastrointestinal conditions.

As regards the first of these, Dr Shepard Shapiro, assistant professor of clinical medicine at N.Y.U., said that in deciding what activities are permissible for such a patient, the physician should be careful to consider the sort of life he led prior to his illness. He said that some of his 60- or 70-year-old cardiac patients had asked him, "Can I play golf?" even though they never had played golf before. He thought they did so merely because golf is now the vogue.

Dr. Shapiro said that anticoagulant therapy has preventive as well as therapeutic aspects. In his opinion, the patient who has a tendency toward embolism should be so treated in order to prevent minimal or trace thrombi from becoming a threatening factor.

Dr. Norman Shaftel, of Kings County Medical Center, reported on a study of 200 patients, some presumably normal and others complaining of constipation. The use of a bed pan rather than a commode, he said, was shown to result in twice as many straining episodes of sufficient intensity to satisfy the accepted criteria for the Valsalva maneuver (a sustained, forced expiration against the closed glottis or other suitable external obstruction to air flow), in non-constipated patients. Constipation, he said, increased that incidence fivefold.

In reviewing the pitfalls in the management of the postoperative patient, Dr. Timothy A. Lamphier, a Cambridge surgeon, reported, "The most common complaint of surgical patients is bowel dysfunction, resulting either from the effects of anesthesia or the effects of a drug used to kill pain." He urged the cardiologist, the gastroenterologist and the surgeon to pay more attention to the physiology of the colon because of the crucial nature of complications that can result from constipation.

Foreign Bodies in the Ear Canal

BYRON M. MERKEL, M.D.

DES MOINES

The practice of medicine is truly an interesting, progressing and rewarding vocation. The past 20 years have produced advances in surgical technics which today permit the removal of an entire lung, the repair of a deformed heart or the replacement of large, diseased segments of the aorta. The same period has brought advances in medical therapy which have rendered acute surgical mastoiditis a very rare condition, have changed pneumonia from a three- to eight-week illness with a high mortality, to a six- to eight-day illness with complete recovery the rule. A case of diphtheria is now a medical curiosity.

With these changes, one sees an expected change in medical writing. Our modern medical text books contain no more than minimal discussions of many conditions that once were presented at great length, and in most instances the abbreviation has been justified. There has, however, been a tendency to shorten beyond a proper limit some of the less dramatic or spectacular subjects that still concern physicians rather frequently. I was quite surprised a few months ago to find in a modern, streamlined text in otolaryngology which I reviewed a year ago and recommended as a valuable reference work for the general practitioner and otolaryngologist that no discussion had been included on foreign bodies in the ear. A check of other recent texts shows similar inadequacies in this area to be quite common. Therefore, in the spirit of a crusader, I have chosen to take up "Foreign Bodies in the Ear Canal."

Foreign bodies in the ear canal are common problems seen often by the general practitioner as well as by the specialist. True, many of them are simple to diagnose and treat, but the occasional difficult case presents a challenge which should stimulate some careful thought and planning, if a satisfactory result is to be obtained.

In dealing with a foreign body anywhere in the body, one must start with an understanding of the anatomy and physiology of that area. An acceptable solution for such a problem must necessarily be based on this knowledge.

ANATOMY AND PHYSIOLOGY

The ear canal leads from the cavity of the concha to the tympanic membrane which closes its inner end. In the infant, it consists of only a cartilaginous portion. The adult canal consists of an outer cartilaginous and an inner bony portion, the latter being formed by the growth of the temporal bone. The canal is widest at the conchal end, next widest at the inner end. It is constricted at the junction of the outer two-thirds, with the inner one-third forming the isthmus where most foreign bodies tend to lodge. The adult posterio-superior wall measures about one inch in length, and the anterio-inferior wall measures 1⅜ inches in length. It is important to remember, therefore, that the posterio-superior portion of the tympanic membrane is closer to the outside than is the rest of the drum.

The skin of the ear canal contains both sebaceous and ceruminous glands which produce the sticky wax normally present in the ear. This substance has as its primary functions protection, by catching small foreign bodies, and removal of the desquamating epithelium of the skin of the canal.

The sensory nerves of the ear canal are from the auriculo-temporal branch of the trigeminus and the auricular branch of the vagus. This latter branch, called Arnold's nerve, provides the vagal stimulation by means of which foreign bodies of the ear canal occasionally produce cough, sneezing, vomiting or syncope. Additional nerves from the geniculate ganglion of the facial nerve, and Jacobson's nerve from the hypoglossal nerve are found. These are also of clinical significance in the production of referred pain from extra-auricular lesions.

The ear canal is surrounded by important structures on five of its boundaries: the tympanic membrane internally; the facial nerve below; the parotid gland and the tempero-mandibular joint in front; the mastoid process behind; and the thin-walled floor of the middle cranial fossa above. Many of these structures do not tolerate trauma well. The bony portion of the canal does not permit much swelling of the lining tissue without producing complete occlusion of the canal.

As the ear canal develops from infancy to adult life, it changes its size as well as its tortuosity. Therefore, the canal of an infant may best be inspected by pulling the auricle downward, backward and outward. The adult canal may best be seen by pulling the auricle upward, backward and outward. The use of a suitable speculum and an adequate light are essential for proper examination of the canal. The training and experience of the physician will determine whether he sees better with reflected or with direct light. The use of magnification is certainly advisable if one keeps the magnified view in its proper perspective. The principle involved is similar to that used by the ophthalmologist in describing the fundus occuli.

PATHOLOGY

The symptoms produced by a foreign body in the ear canal vary with the location, size and nature of the foreign body. One should remember that some objects can be present in the ear canal for years without producing any symptoms. By irritation of the posterior canal wall, the foreign body can produce signs of vagal irritation such as cough, giddiness, vomiting or syncope. If the foreign body is sharp, it usually produces localized pain. The commonest symptom is a feeling of stuffiness—a "stopped-up" feeling in the ear—due to complete obstruction or pressure on the tympanic membrane. Tinnitus is a frequent presenting complaint.

The commonest foreign body in the ear canal is impacted cerumen. The next most common is cotton, which the patient or his unskilled helper pushed into the ear at some time or other and then forgot. Children often put small stones, beads, rubber erasers, paper wads, corn, beans and seeds into their ears. Small pieces of matches or toothpicks are occasionally seen. I have encountered three cases of stuffiness and tinnitus that were relieved by the removal of a single, short hair that had been resting like a spring, with one end on the floor of the canal and the other on the tympanic membrane. Bugs are a frequent cause of trouble during the summer months. The widespread use of hearing aids with individual molds has produced some interesting foreign bodies. The abuse of medications such as powders, ointments, etc. has produced a large number of problems.

REMOVAL

The treatment is, of course, removal of the foreign body. The general principles involved in this procedure are as follows.

1. The patient must be properly controlled. This may mean general anesthesia when the foreign body is large and tightly impacted, when the patient is completely uncooperative, or when the operator is inept and awkward. It is essential that the removal shall do no more damage than the foreign body has been doing by its presence.
2. A good light must be available.
3. A knowledge of the anatomy and physiology of the ear canal and its adjacent structures is essential.
4. Proper instruments must be used. More damage has been done through the use of makeshift instruments than through careless use of proper instruments. One should have available a good metal ear syringe, a good suction apparatus, a sharp and a dull ear hook, a sharp and a dull ringed curette and at least one good ear forceps.
5. Gentleness is necessary in the handling of the instruments, but at the same time the operator must have the ability to use force where it is necessary.
6. A good supply of common sense is, of course, of paramount importance.

ILLUSTRATIVE CASES

One day in the early weeks of my private practice, a fine, kindly, elderly physician brought into my office a nine-year-old boy who had a large bead tightly impacted in his ear canal. The boy's father came with them. After careful examination, I thought it quite evident that the boy was not going to permit any instrumentation of his ear. I therefore advised a general anesthetic and explained my reasons for the advice. The father promptly led the boy from my office with the parting remark that no one was going to give his son an anesthetic.

My surprise was exceeded only by my curiosity when, about 15 minutes later, the kindly old physician returned with the bead in a small emesis basin. "You were right," he told me. "The child should have had an anesthetic, but they are poor folks and just couldn't afford it. I took them back to my office, put the boy on a table with his bad ear down and hit him on the head a few times. The bead dropped out!!"

Several years later when I was in the Air Force, I saw a pilot who had developed a very acute aerotitis during flight. The pain has been excruciating and he had landed at a forward emergency strip. He then hit his ear with the flat part of his hand to relieve the pain, and ruptured the drum. He experienced a loud "shot" and severe momentary vertigo. The pain was still severe, and in trying to open his eustachian tube while smoking a cigarette, he found that he could blow smoke out of his ear. Alarmed by this state of affairs, he reported to the nearest field hospital. There, he was told that he had some impacted cerumen in his ear, and it was washed vigorously with some dirty water. His injury was thus converted to a suppurative otitis media, but the wax was removed!

A third case, illustrative of the unusual, was Mr. P., a 65-year-old unemployed worker, who was seen in November, 1947. He had a severe loss of hearing, most marked in his right ear. The residual hearing in the left ear was inadequate even for amplification. Through the "kindness" of a friend who was "learning the hearing-aid business," he was to have an ear mold made for his "good ear," without charge. The friend was a little confused about a few points in the procedure. He hadn't been listening when his instructors said that one should start by putting cotton into the canal, and he couldn't remember what they had told him to use for impression material. He found some Kerrs dental cement, mixed according to the directions printed on the package, and filled the canal with it. Mr. P. complained of pain, and the friend wiped out as much as he could. Then they started out to find a doctor. The one whom

they found, a half hour later, looked at the hurting ear, said it was just irritated and gave the patient some ear drops! An otologist who saw the ear on the next day found that the entire inner third of the canal was filled with dental cement, well hardened. The patient was referred to me for treatment.

I found by investigation that the compound that had been used was Kerrs No. 2 impression plaster, which sets very hard and permanently in from three to five minutes. It was not at all difficult to evaluate the hardness of the compound. My dental friends told me that only concentrated hydrochloric or nitric acid would dissolve it. The problem was further complicated by the patient's poor hearing in his right ear, and his consequent dependence on his left one.

Surgical removal of the foreign body was thought to carry great risk of permanent damage to the left drum and middle ear. The fact that the epithelium of the canal and drum is continually desquamating was thought to provide a clue to a safer method. It was possible that with desquamation of the outer layers, one might be able to remove the cement without taking with it the drum and the canal lining. This procedure was followed in principle. Glycerine and olive oil were used to soften the skin. Antibiotics were used to keep down infection. A few days later, several small pieces were carefully loosened from the superior portion and removed by means of a sharp ear hook. Eight weeks after the accident, the last pieces of the cement were removed. The drum was intact, and the patient's hearing in the left ear was restored essentially to its pre-injury level.

SPECIAL CONDITIONS

There are special conditions to be considered when the size and shape of the ear canal have been modified by infection, injury or previous surgery. In fenestration surgery, for example, the posterior wall and part of the superior wall of the canal have been removed. The operator comes into contact with such mastoid structures as the plate covering the lateral sinus, the dural plate and, of course, the newly-created fenestra. In the patient who has had a complete tympano-mastoidectomy, even more vital structures may be encountered. Previous infections or injuries to the canal may produce varying degrees of stenosis. The task of identifying the structures may be quite difficult to the uninformed. A good history may be the means of preventing serious complications.

There are some foreign bodies which have been intentionally placed in the ear for the benefit of the patient. In selected cases of atrophic otitis media with indolent, persistent perforations, a patch can be placed over the perforation. Dr. Kos uses a piece of cigarette paper. We have used a thin piece of rubber. Dr. Shambaugh has developed a special wax which he places in the fundus of the ear canal, completely covering the tense portion of the drum membrane, in his postoperative fenestration patients.

IRRIGATION

We are sometimes asked about the relative merits of irrigation and instrumental removal of a foreign body. Irrigation is recommended provided that two questions can be answered in the affirmative: (1) Is the eardrum intact? and (2) Is the foreign body one that will not be unfavorably affected by moisture? Vegetable foreign bodies may swell considerably if moistened, and thus moistening may preclude removal. Certainly there is less danger to the canal wall or the ear drum if irrigation is used.

SUMMARY

The problem of foreign bodies in the ear canal has been discussed from the standpoint of the anatomical factors involved, and the general principles of removal have been presented.

Three illustrative cases have been presented to suggest that although proper light, proper control of the patient and proper instruments are advisable, the most valuable asset is a goodly supply of common sense.

Treatment of Military Personnel on Leave

Physicians who treat military personnel who are on authorized absence should ask their patients to show them Department of the Army Form No. 31, "Request and Authority for Absence." The reverse side of this form contains instructions pertaining to medical treatment or hospitalization that may be required while the individual is absent from his home station.

Failure to follow these instructions sometimes results in delay in processing bills for care provided by civilian physicians and hospitals. Physicians are asked to help such patients notify the proper military authorities.

Such patients are not covered by the Medicare program, which recompenses physicians only for care given to the dependents of military personnel.

State University of Iowa College of Medicine

Clinical Pathologic Conference

SUMMARY OF CLINICAL FINDINGS

A 101-YEAR-OLD WHITE man was admitted to the University Hospitals with a chief complaint that he hadn't been able to pass any water "for not much over one week." The patient stated that he usually urinated about five times a day, and four times during the night. For several years he had had some difficulty in initiating a urinary stream, and it had decreased in size and force. Often urination was accompanied by burning and smarting. During the week before his admission to this hospital, he had had severe abdominal pain associated with his inability to urinate. His family physician had inserted a retention catheter into the bladder and had removed one quart of urine.

During the past year, the patient's appetite had been very poor, and he had experienced a 15-pound weight loss. He avoided fatty foods because they seemed to distend his abdomen. He did eat apples, cabbage and all other foods. Chronic constipation was controlled by daily laxatives. Shortness of breath appeared only on exertion, and he had managed to walk 12 to 14 blocks per day up until a week before admission. Throughout the past 30 years the patient's vision had remained quite good, with the aid of glasses. Some deafness had been present, but not enough to interfere with ordinary conversation.

The patient's mother and father died when he was a child. He had four brothers and four sisters, with whom he lost contact many years ago. He had completed the sixth grade in school, and had worked as a laborer and steam engineer. He did not smoke tobacco, but had an occasional drink of wine in the morning and evening. He had had gonorrheal urethritis when he was 20. A circumcision was done when he was 25. He married for the first time at the age of 84. His wife died six years ago at the age of 85 from "old age," and he never remarried.

The initial physical examination revealed an elderly, somewhat emaciated, alert white male. The skin showed some areas of hyperkeratosis, but was otherwise normal. Bilateral arcus senilis and mild lenticular opacities were present. The fundi were not visualized. Moderately severe dorsal kyphoscoliosis was noted. Increased PA diameter of the chest, decreased expansion, hyper-resonance to percussion and vesicular breath sounds were present. No rales were detected.

The body temperature was 98.6°F. The pulse rate was 72 per minute, but was grossly irregular. The blood pressure was 160/70 mm. Hg. The heart sounds were of decreased intensity. There were no murmurs or cardiac enlargement. P2 was louder than A2. The peripheral pulses were not palpable in the legs, and the radical vessels were thickened. There were no abnormal abdominal findings. A right hydrocele was present. The prostate was firm and 1+ enlarged. Heberden's nodes were present on the fingers. The feet became cyanotic when dependent. The neurologic findings were normal.

The interpretation of the x-ray films of the chest was "healthy chest." The intravenous urograms showed excretion of radiopaque material from both kidneys, with no abnormalities in the pelves or calyces. The latter, however, were not very well visualized.

The blood urea nitrogen was 24 mg./100 ml., and the creatinine was 1.3 mg./100 ml. The total serum proteins were 3.8 Gm./100 ml., with an albumin of 2.6 and globulin of 1.2. Serum sodium was 140 mEq., potassium 4.5 mEq., chloride 108 mEq., and CO_2 content 25.5 mEq./L. The urinalysis showed 3+ albumin and 1+ Meyer's. The specific gravity was 1.020. There were many red and white cells in the urinary sediment. The hemoglobin was 14.5 Gm./100 ml., and the red blood cell count was 4,920,000 per cu. mm., and the white blood cell count was 7,200 per cu. mm., with a normal differential. A serologic test for syphilis was negative.

A gastrointestinal series demonstrated an intraluminal filling defect of constant configuration in the pars media of the stomach. Adjacent to this area on the lesser curvature was a defect suggesting shallow ulceration. After four hours, there was 25 per cent retention of barium in the stomach. Peritoneoscopy showed that the liver was of normal size but somewhat pale, and it had a fine irregular nodular surface. A liver biopsy was obtained. An electrocardiogram showed atrial fibrillation and right bundle branch block. No digitalis had been given.

Ascites appeared two weeks after admission. The patient was walking about twice a day and continued to take his diet. Repeated Meyer's tests of the stools were positive for occult blood during this period. Three weeks after admission, a blood transfusion was given. It was started at 3:00 p.m. and discontinued at 9:00 p.m. Shortly thereafter, rapid respirations and a tachycardia of about 200 per minute were noted. The patient had no other complaints, however, and on physical examination the lungs were clear. Cedilanid, 1.6 mg., was given intravenously, and in 30 minutes the ventricular rate was down to 140 per minute. By the next morning it was 100 per minute. He was maintained on Digoxin. Mercuhydrin injections produced a

12-pound weight loss. Fluid removed from the abdomen was light yellow and clear, and no abnormal cells were seen on microscopic examination. Liver biopsy at the time of peritoneoscopy was reported as normal.

A week later, the patient appeared to be deteriorating. In spite of supportive measures for six weeks, it was not possible to prepare him adequately for surgery, and while he was awaiting discharge to a nursing home, he suddenly died.

CLINICAL DISCUSSION

Dr. Paul M. Seebohm, Internal Medicine: It is often said that there is a real risk in just living. Today we are going to discuss the history of a man who was pretty careful, for he had lived to the age of 101 years. The older members of our faculty tell me that this is one of the oldest patients to be presented at a conference of this sort in the history of the school. Dr. Ziffren, who will discuss the protocol, is particularly qualified for the task, first because he is a surgeon and this patient had a surgical condition, and second because he has a special interest in diseases of the aged. Thus, after presenting the protocol, the x-rays and the pathologic findings, he will give us a general discussion of the problems associated with the care of aged patients.

Dr. Sidney E. Ziffren, Surgery: I don't think I am more qualified to talk about old people than are most other individuals on this staff. As we go about the wards, we see that the average age of our patients is quite high. Actually, over one-third of the patients were 65 years of age or over in the last statistical study that I can quote, one that I think was done in 1951. At present, it appears as if more than half of the patients are over that age.

As you know from the protocol, the patient whom we are to discuss today was 101 years of age and came to us principally because of urinary difficulties. He also said that his appetite had been very poor, and he had experienced a 15-pound weight loss and had been taking daily laxatives. I was interested in that fact. I don't know how long he was taking them, and I couldn't find out from the history. He was emaciated, we learn from the description, and from his physical examination we discover that his blood pressure was relatively good—160/70—there were no murmurs, his heart wasn't enlarged, he had no rales and there were no abnormal abdominal findings. His total proteins, however, were 3.8 Gm./100 cc., with an albumin of 2.6 and a globulin of 1.2. His urinalysis showed 3+ albumin and 1+ Meyer's, and the specific gravity was 1.020. Because of his weight loss and his loss of appetite, someone saw fit to order a gastric series.

Dr. Carl Gillies, Radiology: All of the films of the stomach showed a rigidity. There was an infiltrative lesion involving the greater portion of the stomach. The film showing retention of barium after four hours showed that the stomach was still rigid. An intravenous pyelogram showed normal function of the kidney. There was remarkably little calcification in the larger blood vessels of this elderly person.

Dr. Ziffren: At any rate, a diagnosis of malignancy of the stomach was made, and the patient was therefore transferred to the Department of Surgery.

Now what I am about to tell you has been abstracted from the patient's chart. These facts were omitted from the last paragraph in the protocol, but I think they are interesting. This man came into the Surgery Department weighing 133 pounds. He had been placed on a high-caloric, high protein diet, but as usually happens, he actually consumed only 880, 1,674 and 1,245 calories on three successive days. Ordinarily, we consider 1,500 calories to be the quantity that an individual needs, even while lying in bed, if he is to maintain his weight. If you want the patient to gain any weight, you must give him more than 1,500 calories a day.

Following this recording of his caloric intake, it was decided that the patient should be given a special feeding formula, 100 cc. every three hours. This hospital formula has 1.5 calories per cc., and each liter contains 58 Gm. of protein and 2.5 Gm. of salt. Now if the patient were awakened in the night—though that isn't ordinarily done—these special feedings at three-hour intervals would give him from 800 to 1,200 calories in addition to his diet. But his chart shows that on the next three days he took 273, 214 and 740 calories in addition to his formula, and those, of course, aren't very many calories. Yet, remarkably, three days later his weight was recorded as 138.5 lbs.—a five-pound weight gain.

His physicians weren't satisfied, however. A polyethylene tube was inserted through his nose and into his stomach, and 50 cc. of formula was given him by that means every hour—the equivalent of 1,800 calories every 24 hours. Then two days later his formula was increased to 125 cc. an hour, which would provide him the equivalent of 4,500 calories, and on the next day he received 500 cc. of blood and experienced the acute difficulty described in the protocol. On the day after the blood transfusion, he weighed 145 pounds. In other words, he gained seven more pounds in seven days, or a total of 12 pounds since his admission.

As you know, he was placed on Cedilanid and then on digitalis, and on the day after he was placed on digitalis, the blood protein level reached its highest peak—4.6 Gm./100 cc. As you can see from the protocol, two days later a paracentesis was performed, and 2,200 cc. of fluid was removed. The following day, he was restarted on his formula, 50 cc. every hour, and I note that his weight

on that day was 131 pounds, or two pounds less than on the day he was admitted to the hospital.

Three days later, a peritoneoscopy was done, and on the following day the formula was increased to 100 cc. every hour, the following day to 125 cc. every hour, and on the next day another paracentesis was done and 3,800 cc. was removed. The following day he had Cheyne-Stokes respiration. Two days later he weighed 124 pounds—another seven-pound loss that left his weight nine pounds less than on the day of admission. He died four days later. At no time was this gentleman given any parenteral fluids, except on the one occasion when he received a blood transfusion.

Now, I'm going to refrain from saying anything about pre- and postoperative care in old people until later, and concern myself with cause of death. I suppose it would be quite presumptuous of me to say that his death was cardiovascular in origin. I dare say that it might, however, be acceptable for me to say that his nutritional status was very poor. As you know, people who have a low protein level tend to retain fluids, especially if they have mild cardiac failure, and giving them additional salt doesn't help them any. But I find it very difficult to determine, at least from the history and the physical findings that are present in the chart, why he developed severe ascites. Perhaps he had some disturbance in his salt-and-water metabolism due to some hormonal imbalance, or maybe it was all related to his liver. Possibly he should have been on a sodium-free diet. We do know that patients with ascites excrete very little salt or none at all, but since no Fantus test was run on this patient's urine, I don't know the answer. On the other hand, I should say that the man was just too ill and too old for the type of therapy to which he was subjected. He was overtreated.

Dr. Elmer L. DeGowin, Internal Medicine: Why was he given a blood transfusion?

Dr. Ziffren: The chart doesn't say. I might mention that ordinarily we think a patient, especially an aged individual, who is underweight or has lost a great deal of weight and has some form of malignancy, some form of infection or some form of obstruction is very likely to have a low blood volume. Thus I presume that this man's physicians felt he had a low blood volume, but I have no way of telling. There were no other studies done, and I presume that's why he was given the 500 cc. of blood.

I might note that the blood hemoglobin level after his blood transfusion rose only about 1 Gm. This may very well signify that his blood volume wasn't really adequate. Possibly the reason he went into this phase was that he was just a borderline cardiac.

Dr. Emory D. Warner, Pathology: The lesions most immediately associated with this patient's death, I think, were of an infectious nature. He had a very extensive pneumonia, with practically complete consolidation of both the middle and lower lobes on the right and some pneumonia on the opposite side.

Only E. coli was cultured from the lung tissue, but hemolytic Staphylococcus aureus and beta hemolytic Streptococcus, in addition, were cultured from exudate in the lower trachea and bronchi.

Associated with urinary tract obstruction due to hyperplasia of the prostate of moderate degree, acute cystitis and an acute pyelitis on the left side were present. These were both rather acute and relatively recent, and there was no appreciable pyelonephritis. I think the urinary tract infection had occurred in the last few weeks of life, and I should like to comment on the final note in the clinical summary relative to the patient's dying rather suddenly. I should like to stress this in connection with the existence of severe infection.

In the pre-antibiotic days in this particular institution, perhaps the commonest cause of sudden death (if, as frequently is the case, "sudden" means simply "unexpected") in cases coming to autopsy was infection. The patient usually was known to have infection and typically had had a rather septic course. The physician making afternoon rounds would note on the chart that the patient seemed somewhat better than he had appeared during the last few days. Then the patient would be found dead sometime during the night, and some cardiovascular accident would be suspected as the cause of his "sudden" death.

The patient whom we are discussing today, in keeping with his advanced age, had several neoplasms. A malignant lymphoma involved the distal half of his stomach. It was of the mixed type, a reticulum cell sarcoma and lymphoblastoma. This had extensively infiltrated the stomach wall, replacing the mucosa, and there was some superficial ulceration. It could account, I think, for his loss of appetite and for the loss of some 15 pounds of weight during the last year of his life. It had not metastasized.

There was an occult carcinoma of the prostate which was microscopic in size and was not responsible for his urethral obstruction. In addition to these two malignancies, he had two papillary adenomatous polyps of the colon, one in the ascending colon and one in the rectum. These were both small and did not show malignant changes. They could, however, have helped to account for the occult blood in the stool.

Then, he had a leiomyoma in the wall of the esophagus. This was less than 1 cm. in diameter and probably had been asymptomatic.

The liver, despite the report of an essentially normal liver on peritoneoscopy biopsy, did show a moderate degree of cirrhosis. There was rather mild scarring, some hepatocellular damage with

pleomorphism of liver-cell nuclei and binucleated liver cells, and some nodular regeneration with moderate distortion of architecture. The liver did not appear as though it should have produced much portal hypertension. The patient did, however, have a congested spleen which weighed 440 Gm., and there was mild but perceptible dilatation of the lower esophageal veins. These two things, together with the recurring ascites which seemed out of proportion to the evidence of generalized edema, would suggest some degree of portal hypertension incident to the liver changes.

SLIDES

A section from the right lung showed complete consolidation with inflammatory cells and blood cells.

A section of the lymphoma of the stomach from the margin of the mass showed the tunica propria heavily infiltrated with lymphomatous cells, with wide separation of the normal glandular elements of the mucous membrane. Over the left part of the field there was loss of superficial epithelium, with very superficial ulceration. This was patchy over the tumor surface.

A section of gastric muscularis showed the normal muscle tissue of the gastric wall infiltrated with lymphomatous tissue.

A section of one of the more severely altered areas of the liver showed some reactive fibrosis around the bile ducts and some hepatocellular changes, with pynotic nuclei. There was very little inflammatory-cell infiltrate. Small nodules of regenerating liver tissue gave some distortion of the liver architecture, but the changes were far short of the classic hobnail liver.

THE AGING PROCESS

This case was selected for discussion in large part because of the patient's advanced age in order to provoke discussion of the changes incident to aging or senescence. The changes attributable to aging are, in general, very poorly defined. Those that are commonly stressed include the general wasting of cellular structures such as muscles, liver, endocrine glands, etc., with loss of protoplasm attributable both to shrinkage in size of cells and to an actual decrease in their number. Another feature which is commonly stressed is the change in resiliency in the fibroelastic tissue with, perhaps, a change in the complex proteins of the ground substance of the tissue. In this connection, I should like to point out that the patient whom we are discussing had sufficient preservation of his joints so that he took a daily walk of 12 to 14 blocks for recreation until shortly before his admission to this hospital.

Another change that has been much stressed is progressive fibrosis of structures, especially heart, liver and kidneys. In the usual case, that is difficult to evaluate, for it is impossible to tell how much of the fibrosis is actual collapse of framework incident to loss of parenchyma, how much is truly increased connective tissue resulting from progressive fibrosis and how much is accumulated scar tissue from repeated injuries over a period of years. Another feature that is stessed is the replacement of parenchymatous structures with adipose tissue. It is rather generally agreed that this is attributable to fatty replacement of tissue lost by atrophy, rather than by any aggressive infiltrate by adipose tissue. It is secondary, in other words, to the loss of parenchyma like the replacement of a paralyzed muscle, rather than the primary factor.

Ischemia incident to arteriosclerosis has been very much stressed, especially in recent years, as a major cause for the changes of aging. Some of the fund-raising literature seems to imply virtual immortality for human beings, if arteriosclerosis could only be eliminated. In this connection, I think we need to remember that animals such as the common laboratory rodent age and die without, in most instances, demonstrable arteriosclerosis, and that animals that do not have a vascular system to depend upon also age and die. Thus, it does not seem reasonable to suppose that arteriosclerotic narrowing of vessels, with ischemic change, constitutes the essence of aging *per se.*

In the case under discussion today, there was a moderate degree, I should say, of atherosclerosis of the abdominal aorta. In the rest of the patient's arterial system there was rather less arteriosclerosis than would be average in people of 60. In other words, he had remarkably little for his age. In that connection, it would be nice to have a dietary history that the record does not provide. I should like to know whether he had bacon and eggs for breakfast during about 90 of his 101 years.

Some further ones of our slides illustrated the changes that I have stressed. A section of heart showed mild hypertrophy. The weight of the heart, 430 Gm., was a little excessive. There were irregular enlargement of myocardial fibers and hypertrophied nuclei, and there was rather diffuse fibrous tissue replacement or infiltration of cardiac muscle. There were no gross scars, and there was no evidence of inflammatoy reaction. These findings do not preclude the possibility that he may have had extensive myocarditis sometime earlier in life.

On the basis of outside measurements, the pancreas was essentially normal in size. The substance consisted in part of normal-appearing pancreatic tissue and in part of normal-appearing adipose tissue infiltrating the parenchyma.

The thyroid was perhaps of a little less than average size, but grossly it was essential normal. On section, one could see too little parenchymatous tissue and too much fibrous connective tissue. The connective tissue in the slide was not very densely packed. It didn't look really like

scar tissue. It looked more like collapsed framework, as though it were not a true fibrous replacement of tissue, but a loss of parenchyma. In some laboratory rodents, the rat and the mouse particularly, the thyroid is one of the organs in which this type of fibrous replacement is a rather conspicuous accompaniment of aging, in contrast with the kidney, where it is not very conspicuous.

A section of the patient's aorta showed a mucoid type of degenerative change in the substance of the media. A special stain, such as a muco-protein type of material, would have brought this out clearly. It resembled the type of change we see in an aorta which is undergoing so-called idiopathic medionecrosis. There was an alteration in the chemistry of the ground substance, at least in the aorta. The patient did not have a dissecting aneurysm, nor had this progressed to the point where the aorta was easily stripped apart. Thus he did not have what could be grossly classified as idiopathic medionecrosis.

Aging was the subject of a symposium at the meeting of the Federated Societies of Experimental Biology last spring, and the published account of that discussion in the September issue of the Federation proceedings makes good reading. The symposium dealt with a number of the studies that have been made of aging tissues from the physiologic standpoint, enzyme content with age, changes in lower forms of animal life with aging, some rather detailed studies on aging in rats, from a morphologic standpoint, etc. A fairly extensive bibliography is printed with it.

Dr. John Gius, Surgery: What was the basis for the pneumonia?

Dr. Warner: I don't know that we can ever answer that question specifically. The patient was an elderly man who came in for prostatism and was put to bed. He developed pneumonia of the type we see frequently in debilitated individuals. There were some other things that I might mention that could have been contributory. He had a lot of instrumentation of his upper alimentary tract in connection with forced feeding. I don't know how much this could have contributed. It is also possible that there may have been some aspiration of food.

In this connection, I think we might ask Dr. DeGowin to relate what happened to a certain 150-year-old Englishman in William Harvey's time when he was overfed.

Dr. DeGowin: In the writings of William Harvey, you will find an autopsy protocol on Thomas Parr, a contemporary of Harvey and, reputedly, the oldest man in England. I can't remember the details, but I think he was around 150 years of age. He lived in the country and was a laborer. The reigning king heard about this man of great age, and commanded him to come to court. After he had been wined and dined for a couple of weeks, he suddenly died.

William Harvey, who was physician to the king, had the job of doing the post on him, and the autopsy protocol was published. Harvey couldn't find very much that was wrong with the man. Of course, he did not have the benefit of microscopic examination of tissue, but he concluded that the change from a very simple, frugal life to the luxuries of the court had been just too much for him.

Dr. Seebohm: We can infer, then, that life on the Surgical Service is just too lush?

Dr. Raymond G. Bunge, Urology: I'd like to know whether there was any spermatogenesis.

Dr. Warner: Spermatogenesis was slight, but present.

Dr. Seebohm: Verification of age is sometimes a problem. In most newspaper accounts of individuals over 100 years of age, there always is an element of doubt regarding just when they were born. As regards the age of the man whom we have been discussing today, we know that he said his age was 80 when he appeared here in 1935. Thus, when he came back in 1955 and said he was 100 years of age, he was at least being consistent. Also, he gave the same birth date on both occasions—July 11, 1854.

Dr. Ziffren, would you like to give us some information as to how many people there are in the United States who live to be 100 years old, and how many are over the age of 80?

Dr. Ziffren: Since the first part of this century, the total population of this country has about doubled, but the number of individuals 65 years of age and over has quadrupled. At the present time there are approximately 13,000,000 people in this country over 65 years of age, and more than 2,000,000 who are 80 years of age and older.

One point for us to remember is that the great increase in the span of human life has been largely due to the great advances that have been made in the prevention and treatment of diseases of infancy and childhood. Actually, an individual who reached the age of 80 in 1900 had a life expectancy of about 5.5 years, and one who reached 80 in 1954 had a life expectancy of about 6.9 years. Nowadays, if one reaches the age of 85, he will probably live 5.5 more years, if he reaches the age of 90 he will be likely to live about three years, and at 100 years of age his life expectancy is approximately two years.

Earlier, I remarked about the reason for giving our patient a blood transfusion. One of the problems that we have when we operate upon older people is that not too rarely they may fall into shock, and if their blood volume is very low to begin with, we run a tremendous risk that the shock will become irreversible, for they don't have the resiliency of the younger person. We don't run routine blood volumes on old people, but it is done in many places. For all practical purposes, we know that an individual who has been starv-

ing for a long period or who has some severe infection, cancer or intestinal obstruction is going to have a reduced blood volume. If the blood count seems relatively normal, it still doesn't mean anything, for that's only an illustration of the reduced volume.

It is not uncommon to see, for instance, an individual whose hemoglobin is, let's say, 13 Gm. on admission experience a decline to 11 Gm. after two transfusions. One of the contributing causes of lower blood volume is dehydration. A great many of these people don't drink enough and don't eat enough. They get along fine until some illness strikes, and then they get into trouble. We are in the habit, of course, of giving them blood transfusions, and on occasion we get into trouble. This case, obviously, is an illustration. We depend upon our medical colleagues to prevent us from getting into trouble, or we look to them to get us out of it when we've made a misstep.

Elderly people drink less water or other fluids than younger people do, and it is surprising how little they need in the way of water. One of the difficulties we run into in elderly people is that everyone wants to treat them vigorously. Most physicians want to be sure that they are getting enough fluid, and want to start them on intravenous fluids right away. For an aged individual who isn't very active, one of the easiest ways to get into trouble and get pneumonia is to start loading up on fluids, particularly if he has low plasma protein levels and especially if he has a little cardiac difficulty. He begins to retain water and get edematous.

The water requirement of an elderly individual is not as large as that of a younger one. One can expect, for instance, that if an individual takes in 1,500 cc. of fluid a day, he has enough, for he doesn't put out much urine. He doesn't get into any great difficulty if he puts out 750-1,000 cc. per day if his fluid intake isn't too great. The same holds true for electrolytes. Unless the patient has really lost quantities from severe diarrhea or vomiting, it ordinarily is unnecessary to supply him with any electrolyte solution.

One of the problems that we are concerned about is nutrition, and you can well understand our concern after reading and hearing about this patient. One of the reasons patients don't get well is poor nutrition. The best way to improve the nutrition is to maintain an adequate diet. If the patients won't eat, one of the methods we use is to administer alcoholic drinks as a stimulant. If intake is still inadequate, we feed them a formula. If they won't take it voluntarily, we are in the habit of passing a small polyethylene tube into the stomach and feeding the formula through it.

The effort to bring a patient into a positive nitrogen balance by parenteral measures is one that really is not very successful, especially in an older person. First, the usual type of protein hydrolysate that is on the market is a five per cent preparation with dextrose, and on calculation you would probably say that it had 50 Gm. of protein in the 1,000 cc. But the manufacturer himself says that it has only 38 Gm. of protein. Now, I don't know why it is called "five per cent," but it provides only 355 calories. If you wanted to give your patient a really large quantity of protein and calories by parenteral means, you would have to give him at least four bottles just to maintain his weight. If you wanted to give him more, you would have to run IV into his veins day and night, and that is not a very good idea. Of course you can help by adding alcohol, but as a result the veins may become thrombosed early. About the only other method is to thread a polyethylene tube into one of the large vessels and give the patient this material along with, perhaps, some 50 per cent glucose in addition to the alcohol. In that manner one can make 1,100 cc. contain about 900 calories. But as you can see, it is difficult. Thus, if at all possible, we try to feed these individuals by mouth, and the simplest way we have of feeding a rich diet is by means of a formula.

Dr. DeGowin: Would you say something about the lack of the usual signs of infection, particularly in old people, such as leukocytosis?

Dr. Ziffren: This patient, for instance, who apparently died of pneumonia, I think had a white count of 6,200 and had no fever a week before he died. He didn't have any fever, at any rate, during the entire period. This sort of thing is not uncommon in an older individual. The elderly don't respond to infections like younger people. For instance, the simplest surgical example would be acute appendicitis. It is not an uncommon disease in aged individuals, and yet we seldom think of it. We don't think of it because the symptomatology or signs are ordinarily quite different from the classical picture. The patient may have nowhere near an 11-12,000 white blood cell count; he may not have any fever; his tenseness may be minimal; and yet he looks sick.

This brings me to a point which I think is extremely important. One has to use clinical judgment in assessing such a patient. The eyesight is a wonderful means of deciding whether or not pend upon the classic textbook symptoms. The a patient has much life left in him. One cannot depatient may have an infection in the leg and sometimes may show symptoms. He may be lethargic, he may just not do anything, just lying still, not talking, drinking or eating, and his temperature may not be high, but one knows that if he doesn't do something for him he may die.

Dr. Seebohm: Dr. Ziffren, I think that TIME recently quoted you as saying that age should not be a barrier to operative treatment.

Dr. Ziffren: I had hoped I could get by that reference. Age itself should not be a barrier. If you

had another patient who showed the picture manifested by this patient whom we have been discussing, you certainly would not operate on him. Though age itself is not a contraindication to surgery, an added complication such as uncorrected severe cardiac decompensation or severe azotemia from renal disease would prevent it. But similarly, a young person who had either of those complications would not be a candidate for surgery. I repeat, age *per se* doesn't necessarily mean that a patient can't be operated upon.

Dr. Gius: Do you think that in addition to being very careful about giving considerable amounts of fluid, we should also be judicious about the numbers of calories that are given? Many times the individuals who have been in a state of starvation are made very ill by forced feeding.

Dr. Ziffren: I think you may be right. It's of course true that individuals who receive a great many calories get into trouble if they have been starved for a long period of time. But the individuals with whom we are concerned are not precisely of that type. They have been getting along satisfactorily. They walk into the hospital, and they haven't been starved so severely that they have an acute vitamin deficiency. We know that since vitamins participate in the utilization of food, some of these individuals who have been more or less starved for long periods of time and have subsisted with a low vitamin intake or none at all may suddenly go into avitaminosis if we start them on large caloric intakes unless we provide them supplementary vitamins.

But generally speaking, I don't believe we run into too great difficulty by trying to feed the patient. He may get a diarrhea, and we may have to cut down his food intake. In addition, the syndrome of protein overload from high protein feedings with inadequate water intake can occur, and it must be guarded against.

SUMMARY OF NECROPSY FINDINGS

At the time of death there was extensive hemorrhagic pneumonia, predominatly involving the middle and lower lobes of the right lung. Only E. coli was cultured from the lung tissue, but hemolytic Staphylococcus aureus and beta hemolytic Streptococci, in addition to E. coli, were cultured from exudate in the lower trachea. There was an intense cystitis and left pyelitis (E. coli and P. vulgaris), but there was no significant pyelonephritis. The urinary retention was due to hyperplasia of the prostate, which was moderate in degree.

Several neoplasms were present. The distal half of the gastric mucosa, along the greater curvature, was replaced with a mixed-type malignant lymphoma. No metastases were found. The prostate contained an occult adenocarcinoma, submacroscopic in size. There were two small adenomatous polyps of the large bowel, one in the ascending colon and one in the rectum. Neither showed malignant change. A small leiomyoma was present in the distal esophageal wall.

Arteriosclerosis was only moderately severe in the distal aorta and was quite mild elsewhere. The coronary arterioles showed patchy atherosclerosis, but no appreciable narrowing. There was, however, patchy myocardial fibrosis and mild hypertrophy. There was considerable pulmonary emphysema. Generalized wasting was minimal for the patient's age. There was mild cirrhosis of the liver, with mild splenic congestion, ascites and esophageal varices.

ANATOMIC DIAGNOSES

1. Hyperplasia of prostate
2. Acute cystitis and left pyelitis, severe
3. Hemorrhagic pneumonia, predominantly right lung.

Accidental Deaths Among the Aged

Though most of us regard disease as by far the most important cause of death among elderly people, the Metropolitan Life Insurance Company recently published some statistics* that show accidents to be responsible for a very considerable share of fatalities in that age group.

The Company reports that though mortalities from accidents among people over 65 has decreased 15 per cent during the past six years, from 210 to 180 per 100,000, the number of them still exceeds 25,000 per year. Thus, accidents are a more important threat to them than any disease other than cardiovascular difficulties and cancer.

As older people advance in age, Metropolitan's figures show, their accident death rate rises sharply. Among white men in the years 1953 and 1954, the mortality increased from 141.7 per 100,000 of ages 65-74, to 730.7 per 100,000 of age 85 and over. Much more rapid was the corresponding rise among white women—from 72.1 to 903.0 per 100,000. As a result of this difference in the two age curves, the sex ratio of mortalities changes with advance in age.

The breakdown of these figures is also interesting. About one tenth of accidental deaths among these older persons occur in resident institutions such as homes for the aged, nursing homes and hospitals. Motor vehicle accidents rank second as a cause of fatal injury among older people. Fires and burns of other sorts ranked third.

* METROPOLITAN LIFE INSURANCE COMPANY STATISTICAL BULLETIN, June 6, 1957, p. 6.



LET'S LOOK AT OUR SCHOOL SYSTEM

The fact that the Russians have beaten us by at least six months in putting satellites into the skies may be nothing particularly to our nation's discredit, for quite possibly our physicists failed sufficiently to accelerate their timetable. But however that may be, we Americans have been forced to undertake a reevaluation of ourselves and our institutions. In particular, we have been forced to ask ourselves whether or not we have what it takes to maintain our leadership, or in other words, whether our schools are doing the job that we need to have them do.

All of us have long been aware that in the transmission of subject matter, European schools generally have been more efficient that ours. Graduates of English preparatory schools or continental gymnasia have accomplished nearly if not quite as much, scholastically, as the average American B.A.'s or B.S.'s, and have done it in fewer years. We have rationalized that fact by pointing out to ourselves that in America, where all youngsters of at least average mentality go to high school and perhaps to college, standards must necessarily be lower than in lands where only the brightest are permitted to continue their education. Indeed there are a great many people in this country—though their number probably includes few physicians—who have maintained that training in democratic living, as distinguished from acquiring a mastery of text material is—and indeed ought to be—the paramount objective of American education.

Up until a few weeks ago, the sufficiency or insufficiency of American theory and practice in secondary and collegiate education was no more than an academic question. Now, suddenly, it is a vital one—if it is not now too late for us to make a change.

Russia—nearly the last nation from which we might have expected it—is demonstrating that mass education does not necessitate a watered-down curriculum such as that to which the vast majority of American children have been allowed to limit themselves. Russia's population of 200,-200,000 is at least roughly comparable with America's 170,000,000, and though as recently as 1927 there were no more than 1,500,000 Russian youngsters attending school, there are 20,000,000 this year, according to a study published recently by the U. S. Office of Education,* as compared with our 30,000,000. Those school enrollments are close enough to show that if Russia is skimming off the intellectual "cream" for admission to its primary and secondary schools, it is, at least, skimming deep. Furthermore, though comparisons of academic attainment aren't available and might not be reliable if we could get them, it appears that Russia is making nearly all of those 20,000,000 school children really work.

Of the 1,500,000 Russian high school students who finished their work in 1956, the average had taken five years of physics, one year of astronomy, four years of chemistry, five years of biology, and 10 years of mathematics. In contrast, of the 1,300,000 students who graduated from high schools in the United States last June, less than one third had taken even one year of chemistry, only one fourth had taken a year of physics and less than one seventh had studied advanced mathematics.

Soviet school children begin algebra and geometry in the sixth grade. Trigonometry and calculus are studied in the ninth and tenth grades (the last two years, for there are just ten years in the Russian system). Forty per cent of Russian secondary school students were studying German last year, 40 per cent English and 20 per cent either French, Spanish or Latin.

Now up until this year it has been highly dangerous for anyone in this country to look favorably upon anything Russian, and we certainly do not want anyone to suppose that we approve of the political color that no doubt suffuses Soviet instruction, even in the basic sciences. And another disclaimer—we don't hold that upgrading the difficulty of the American grammar school and high school curricula would produce a flood of teen-age mathematicians, chemists and physicists capable of catapulting the United States clearly into the lead in the satellite and missile race. We are saying merely that Americans should quit kidding themselves that their school system is accomplishing as much as possible in mass education. And we should like, further, to point out that we Americans can't reasonably hope to attract the maximum numbers of capable young people into any of the scientific fields as long as we permit them to elect "pipe" courses in preference to those that might challenge them and lead them into cultivating scientific interests.

* U. S. Looks at Soviet Schools: Science Push Gets Results as the Secret Police Watch. WALL STREET JOURNAL, November 11, 1957, p. 9.

A MODEL SMALL-COUNTY SOCIETY

The Pocahontas County Medical Society has distinction in that its members are taking active parts in civic affairs. Three physicians, out of a total membership of eight, have served or are serving as mayors of their respective towns. Dr. C. L. Jones, secretary of the Society, is a former mayor of Gilmore City; Dr. W. F. Brinkman served the town of Pocahontas for two full terms, and—carrying on the tradition—Dr. J. B. Thielen is currently the mayor of Fonda. In one way or another,

both men who are former mayors still maintain an active participation in the affairs of their communities.

The rest of the doctors who make up the membership of the Pocahontas Society are doing their share—in school board work, in Boy Scout activities, in addressing service clubs and in other community activities.

And although their civic work and their busy practices in five different towns take much of their time, they still manage to achieve nearly 100 per cent attendance at regular monthly county medical society meetings.

Their meeting on October 24 was no exception, for all eight were present. Dr. John Rhodes gave them a full report on the ISMS Annual Conference of County Society Officers, which had taken place only a few days before, Mr. Morris Bandy, physician-relations representative of Blue Shield, spoke to them on recent Blue Shield changes, and Mr. Gerald Buckles, field secretary for ISMS, commented on the proposed expansion of Social Security into the fields of free hospitalization and surgery for OASI recipients.

The members managed to have quite a bit of fun, too. At the home of Dr. and Mrs. James Gannon, where the meeting was held, some special movies of unique interest to the members were shown, and later, a fine dinner was served.

Such cooperation, both in community and in professional matters is in the best interests of Medicine and deserves the highest commendation.

ETHICS FOR PATIENTS

The original Code of Ethics of the AMA, adopted in 1847, listed 10 obligations of patients to their physicians. They have long since been dropped, but perhaps unwarrantedly. Here are some samples:

"The members of the medical profession . . . who are required to make so many sacrifices of comfort, ease and health . . . have a right to expect and require that their patients should entertain a just sense of the duties which they owe to their medical attendants. . . .

"A patient should . . . confine the care of himself and family, as much as possible, to one physician, for a medical man who has become acquainted with the peculiarities . . . of those he attends is more likely to be successful in his treatment. . . .

"A patient should never weary his physician with a tedious detail of events or matters not pertaining to his disease. . . .

"The obedience of a patient to the prescriptions of his physician should be prompt and implicit. He should never permit his own crude opinions . . . to influence his attention to them. . . .

"A patient should, after his recovery, entertain a just and enduring sense of the value of the services rendered by his physician, for these are of such a character that no mere pecuniary acknowledgement can repay or cancel them."

THE VIRUSES

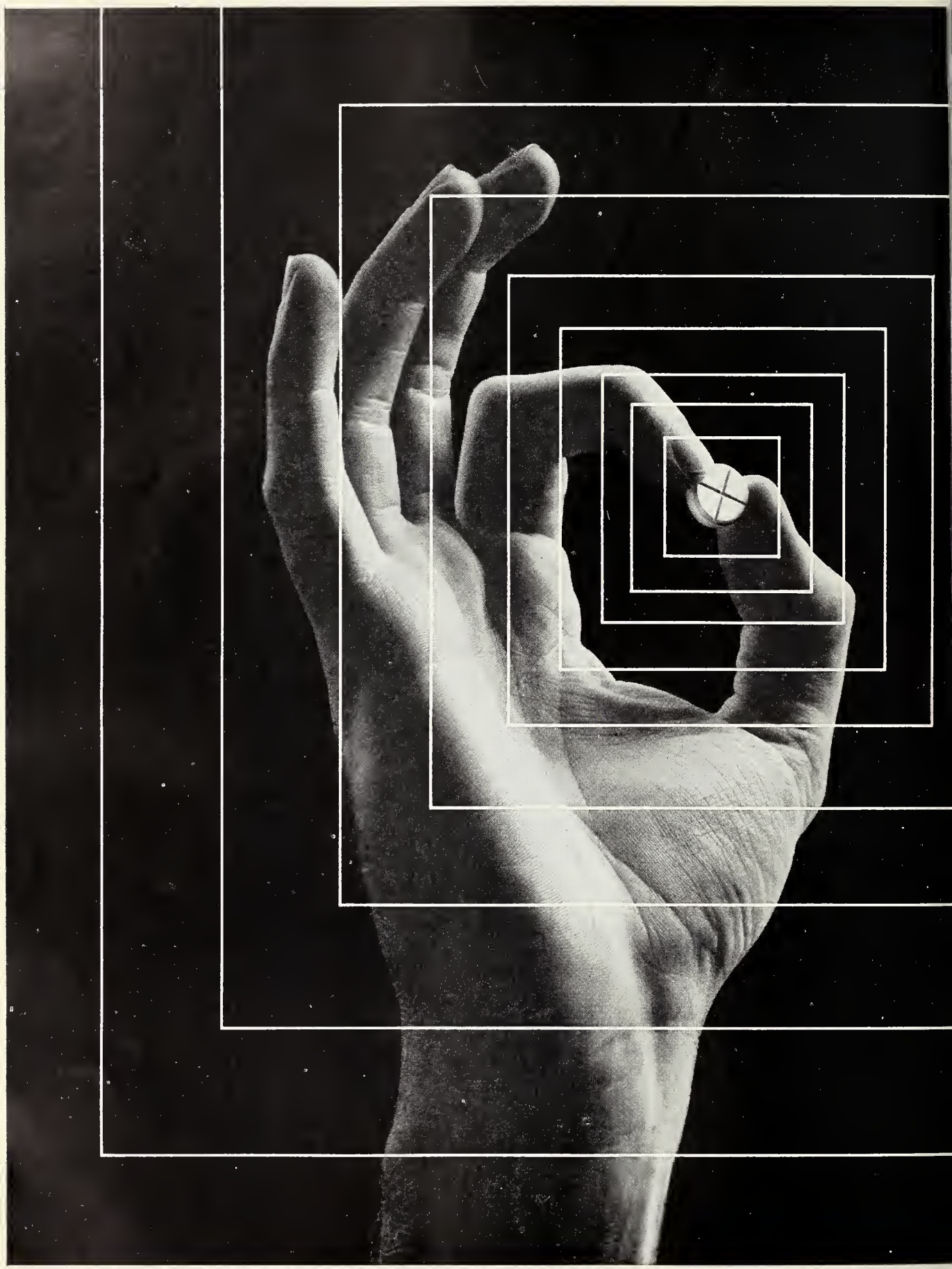
During the summer and early fall of 1957, the drug houses labored long and hard to produce enough Asian-flu-virus vaccine to prevent the anticipated epidemic. In order to manufacture large quantities of it, they had to produce mostly the monovalent vaccine. This monovalent vaccine contained the "Asian" strain, called in some quarters the A″. The old vaccine contained the A and B strains. Although the virologists haven't been surprised, it has been something of a disappointment to some people that a certain number of individuals previously vaccinated with the new vaccine have become ill during the epidemic. Preliminary investigations hint that the epidemic is not "pure," and that other viruses may be riding on the coattails of the Asian strain.

While Sputnik was spinning in her newly acquired orbit last month, scientists at the New York Academy of Medicine were attempting to clarify our muddled understanding of these newly discovered respiratory viruses. Approximately 70 types of respiratory viruses have been isolated during the past 10 years. These include viruses in the Coxsackie group, the "ECHO" group (enteric cytoplasmic human orphans), the adeno viruses, the "SGV" viruses (salivary gland viruses) and many others. Within these large groups, about 2,500 strains have been isolated! Before the ink is dry on this editorial, there will be others.

The above named viruses affect children primarily, but adults are also attacked. Diseases such as pleurodynia, non-bacterial meningitis, myocarditis, pericarditis, atypical pneumonia, pharyngoconjunctival fever, non-bacterial pharyngitis and many others are caused by the "new" viruses previously mentioned. Other organs and systems in addition to the respiratory—the liver, brain and kidneys—may also be involved. Viruses may lurk in these organs for years, and this fact has given rise to the "latent virus" theory that such dormant viruses may cause degenerative diseases in adulthood.

One hope of the virologists is, therefore, that the population may be immunized against these infectious agents. The dream, however, can't be realized by means of a BB-gun attack such as we are using in our attempts to slay the Asian flu. A shot-gun charge will have to be developed. The virologists envision a vaccine containing 25 or 30 antigens, or perhaps several vaccines each containing 25 or 30 of them. By such means, we might eliminate many infectious diseases that are now common, and might even prevent or mollify some of the diseases of old age.

The viral antigens of today are only a beginning.



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NEW DOSAGE. The recommended adult dose is 1 Gm. (2 tablets or 4 teaspoonfuls of syrup) the first day, followed by 0.5 Gm. (1 tablet or 2 teaspoonfuls of syrup) every day thereafter, or 1 Gm. every other day for mild to moderate infections. In severe infections where prompt, high blood levels are indicated, the initial dose should be 2 Gm. followed by 0.5 Gm. every 24 hours. Dosage in children, according to weight; i.e., a 40 lb. child should receive ¼ of the adult dosage. It is recommended that these dosages not be exceeded.

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1. Nichols, R. L. and Finland, M.: *J. Clin. Med.* 49:410, 1957.

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*Reg. U. S. Pat. Off.

President's Page

Christmas festivities turn our thoughts once more to the age-old story of Jesus and how He came to dwell upon this earth. That story typifies self-sacrifice and determination to fulfill a mission, and in consequence it should be especially inspirational to the physician, whose duty is to heal the wounds of others, and not to glorify himself or to look upon the number of his worldly possessions as the measure of his accomplishment.

Christmas in our land is also a time for many happy events and festivities. It is a time of good will and good cheer. It is a time when we renew old friendships and express some of the more sentimental thoughts which we have carried with us throughout the year. It is a time when we say "thank you" and express our appreciation without embarrassment.

Let me take this opportunity to thank all of you, the fine physicians who have served our Society well and who are making my term of office a joy, rather than a chore.

To all of you, I wish a Merry Christmas and a Happy New Year!

Fred Sternagel

President

THE JOURNAL *Book Shelf*



BOOKS RECEIVED

THE YEAR BOOK OF OBSTETRICS AND GYNECOLOGY (1957-1958 Series), ed. by *J. P. Greenhill*, M.D. (Chicago, The Year Book Publishers, 1957. $7.50).

INTRODUCTION TO ANESTHESIA—THE PRINCIPLES OF SAFE PRACTICE, by *Robert D. Dripps*, M.D., *James E. Eckenhoff*, M.D., and *Leroy D. Vandam*, M.D. (Philadelphia, W. B. Saunders Company, 1957. $4.75).

MAY'S MANUAL OF DISEASES OF THE EYE, 22nd EDITION, ed. by *Charles A. Perera*, M.D. (Baltimore, The Williams & Wilkins Co., 1957. $6.00).

THE STORY OF PEPTIC ULCER, by *Richard D. Tonkin*, M.D. (Philadelphia, W. B. Saunders Company, 1957. $2.25).

DERMATOLOGIC FORMULARY, SECOND EDITION, ed. by *Frances Pascher*, M.D. (New York City, Hoeber-Harper, Inc., 1957. $4.00).

THE CHRONICALLY ILL, by *Joseph Fox*, Ph.D. (New York City, The Philosophical Library, Inc., 1957. $3.95).

SIMPLIFIED DIET MANUAL, WITH MEAL PATTERNS, prepared by the Nutrition Service of the Iowa State Department of Health, in cooperation with the Iowa Dietetic Association. (Ames, Iowa State College Press, 1957. $1.95).

BOOK REVIEWS

BRONCHOPULMONARY DISEASES—BASIC ASPECTS, DIAGNOSIS AND TREATMENT, ed. by *Emil A. Naclerio*, M.D. (New York City, Hoeber-Harper, Inc., 1957. $24.00).

One of the larger volumes brought forth in recent years, this book is a truly contemporary coverage of bronchopulmonary diseases.

The authors and editor emphasize that bronchial components are important to an understanding of disorders within the chest.

Although this is a collection of contributions from 142 individuals, there is a uniformity of point of view and a rather high order of medical writing. The arrangement of the material is good. The amounts of space accorded to various conditions are in balance with present-day emphasis and curiosity.

Particularly good are some of the early chapters on functional anatomy of the lung and pathogenetic concepts leading to a more precise understanding of the development of pulmonary disorders.

An orderly series of well-prepared chapters on diagnostic technics presented by qualified authorities completes the first portion of the book.

Subsequent chapters describe pulmonary manifestations associated with blood dyscrasias, infectious diseases and collagen disorders. The rest of the book deals systematically with all aspects of the respiratory tract and with its circulatory relationships.

Altogether, it is an excellent modern reference text. The illustrations have been chosen with care, and the reproductions of x-ray films are of high quality.

As a reference text, this is clearly one of the best. Although it is so large a volume that it weighs seven pounds, it is worth its weight.—*Leon J. Galinsky*, M.D.

ANESTHESIA, A MANUAL FOR STUDENTS AND PHYSICIANS, FIFTH EDITION, by *Stuart C. Cullen*, M.D. (Chicago, The Year Book Publishers, Inc., 1957. $5.50).

The fifth edition of this book, like all of its predecessors, gives a clear, concise description of the various types of general anesthetic agents, together with the technics of their administration. The muscle relaxants are thoroughly discussed. Various forms of local and regional anesthesia are described in detail. The chapters on Ventilation and the Airway, while not new in this edition, are extremely interesting and valuable, and cover these two important subjects in a brief but complete manner.

In this fifth edition, the chapter on the Use of Depressant Drugs has been completely revised so that the emphasis is on a consideration of the patient and his needs. It includes a discussion of the tranquilizer drugs as used in pre-anesthetic medication. This chapter is a definite step forward in the methods of considering the use of depressant drugs.

Dr. Cullen's book remains one of the finest texts available for the student of anesthesia, as well as an excellent reference work for the part-time or full-time anesthesiologist.—*E. P. Lovejoy*, M.D.

BATTLE FOR THE MIND, by *William Sargant*. (New York City, Doubleday & Company, 1957. $4.50).

This volume, written by William Sargant in 1956, is suggestive of the attempts that are being made in some psychiatric areas to bring together unified concepts of human behavior. I believe these concepts, theories and hypotheses, as outlined at the present time, are premature, and if strictly adhered to can cause delay in fundamental fact-finding about human activity. It is obvious to all concerned that this new science must solve, or at least help to solve, the problems of social living and the problems of the humanities, else we may again be in the position of arriving too late with too little. More than one "sputnik" revolves around the world, and no one today can say what miracles of physical achievement may be available to humanity in a few short years or decades. At the present time, it would not appear that the sciences of human be-

havior are sufficiently "scientific" to send up a psychological sputnik, but it is at least mildly assuring to know that there are those who are trying to think along this line.

Dr. Sargant's book relates the basic principles of Pavlov's physiologic psychology from dogs to human beings. He traces the reactions of the animals and compares those reactions to their possible counterparts in man. It is his concept that the activities of early religious conversion, the snake cults of the southern United States and the brainwashing technics recently developed in other countries are basically the same thing, and that by understanding the physiology of these experiences, we may be able to develop some means of nullifying efforts of this sort, or at least minimizing their effects.

It is pleasing to note that the author does not suggest the use of similar technics by the free world, for it is only by denying such technics, such abilities and mass influence, and such emotional pressures that the world can maintain its bastions of individual freedom and human dignity.—*Howard V. Turner,* M.D.

THE YEAR BOOK OF ENDOCRINOLOGY, edited by *Gilbert S. Gordan,* M.D., Ph.D. (Chicago, The Year Book Publishers, Inc., 1957. $6.75).

This volume contains a summary of the important literature in the field of endocrinology for the year 1956-1957. As in previous volumes, the editor presents an introductory note at the beginning of each section, which gives the pertinent clinical application of the new knowledge of the specific gland. The newer knowledge concerning the parathyroid gland, the hypoglycemic agents in the treatment of diabetes mellitus and additional information concerning the pituitary growth hormone are particularly interesting. This book is recommended for all physicians who wish to keep abreast of the changing concepts in the field of endocrinology. —*E. Thomas Scales,* M.D.



Dr. Charles H. Johnston (Colonel, U.S.A.F.R.), of Des Moines, got his safety harness adjusted by Technical Sergeant Robert A. Daniels before trying out a new type of ejection seat at the 7112th Central Medical Group, Physiological Training Unit, at Wiesbaden Air Base, Germany. The new type of ejection seat, developed by T/Sgt. Daniels, is fired by compressed air instead of the explosive shell formerly used. Dr. Johnston is one of six Air Force reserve officers, all physicians, who visited bases in Germany, France and England between November 4 and 15. He is medical director at the John Deere plant in Des Moines and carries on a private general practice in addition to his industrial work.

Iowa Academy of General Practice

POSTGRADUATE STUDY CREDITS

The year 1957 is almost at an end. All members of the Academy of General Practice must forward a report of the hours of study credit to which they are entitled to the Academy office at the end of the year. An Academy membership lasts only three years, and during that period each member must complete 150 hours of postgraduate study, 50 hours of which must be in Category I courses. The remainder may be in Category II. Completion of the postgraduate study requirement is a prerequisite for the member's reelection to membership for another period of three years.

Now is the time to start making plans for the coming year, 1958. Plan to attend the various postgraduate study conferences, keeping in mind that certain ones of them rate Category I credit and that others of them rate only Category II.

The following conferences that already have been scheduled for 1958 rate Category I credit. Note them on your calendar and make plans to attend. During February, at Iowa City, the S.U.I. College of Medicine, in conjunction with the Iowa Chapter of AAGP will present a four-day course for general practitioners. Each day will be devoted to a different field of Medicine. On February 18, the topics will be in the field of Internal Medicine; on February 19, Obstetrics and Gynecology; on February 20, Pediatrics; and on February 21, Surgery. A complete program will be published at a later date.

Don't forget that March is the month for the Annual Scientific Session of the American Academy of General Practice. It will be held at Dallas, Texas, on March 24, 25, 26 and 27. Consult GP for the program, make your reservation and plan to attend.

On June 18, a postgraduate conference sponsored by the Iowa Academy of General Practice will be held at Templar Park, Spirit Lake, Iowa. It is to be a one-day meeting, and the program will be announced later. Anyone who desires to secure accommodations can get them at Templar Park or at nearby Arnolds Park.

During September, the Iowa Chapter will hold its Annual Meeting, beginning on September 21 and extending through September 22 and 23.

There are numerous other conferences each month throughout the United States, and a current list of them is published in each issue of GP. The conferences for which Category I credit is granted are so marked, and all others are Category II.

The State University of Iowa College of Medicine offers postgraduate conferences periodically. All physicians receive individual announcements of them, and all such courses or conferences carry Category I credit.

Members, please send in your 1957 study-credit report to the Iowa Chapter office, 911 Bankers Trust Building, Des Moines 9, at the end of the year 1957, and at the end of each year thereafter. Apparently some members have been under the impression that these reports should be forwarded only at the end of the third year of membership. They should be submitted *at the end of each year.*

Make plans now to attend various postgraduate conferences, especially those sponsored by the Iowa Chapter.

PLAN FOR SLASH IN VETERANS' BENEFITS

In a special message to Congress early next year, Mr. Eisenhower will propose that Congress do away with many laws that give the non-disabled veteran all sorts of special advantages over his fellow citizens.

The most significant and most controversial proposal will deal with pensions. The Administration will recommend that the veterans' pension program be coordinated with the Social Security setup. Any Social Security payments due the ex-serviceman would be deducted from any veteran's pension he may have coming.

Other key plans expected to be outlined by the President are these: (1) Congress should fix a ceiling of 125,000 beds, the present number, on the total capacity of veterans' hospitals. (2) Peacetime servicemen should not be granted educational benefits, pensions, home loans and other aid given war veterans, but should be awarded special unemployment benefits, regardless of their eligibility for regular jobless aid under existing state laws. (3) Congress should nail down the already proposed merging of special veterans' housing programs into the regular Federal Housing Administration programs. The result would be to end most veterans' preference in housing programs soon.

The proposals certainly will touch off a bitter fight on Capitol Hill; veterans' groups already are preparing a propaganda barrage to turn loose

against the President's recommendations. What's more, the proposals will clash head-on with impending efforts by the veterans' groups to secure Government generosity to ex-GI's going far beyond anything provided in the present law. The American Legion and the Veterans of Foreign Wars will push again their long-stalled drive for pensions for almost all low-income veterans at age 65.

"Right now," says an influential House Democrat, "it looks as though neither side will get anywhere, and that each effort will cancel out the other. But both proposals—to give the veteran more and to give him less—will keep coming back, I'm sure."

Behind the coming Presidential proposals are several threatening problems. The most complex problem is posed by pensions, which are paid to a veteran for something that happened to him after he left service—disability or loss of earning ability, for example. Such pensions are distinct from compensation which the Government pays a veteran or his survivors for a disability sustained in service, payable no matter what the veteran's income is or how well he's able to work.

Close to 2,500,000 veterans and their survivors are now drawing nearly $2,000,000,000 a year in compensation payments ranging from $19 to $450 a month each. These outlays are expected to start dropping steadily after 1960. In contrast, the pension load starts low and increases as men who left service in good health become infirm and disabled and die. Some 1,250,000 veterans and their survivors are now drawing over $1,000,000,000 a year in pensions varying from $66 to $135 a month. By 1960, under present law, this outgo will rise to almost $1,400,000,000 a year; by 1975, to almost $2,000,000,000; and by 1985 to over $3,400,000,000.

The philosophy that the Eisenhower Administration will propose—that the physically-sound veteran should be treated, after some initial readjustment help, just like any other citizen—is based on two main contentions.

First, the Government has many more welfare programs than in earlier days—Social Security, public assistance, workmen's compensation—of which the veteran can avail himself.

Second, the United States is becoming more and more a nation of veterans. The Bradley Commission said that in 1940 ex-servicemen and their families were only 11 per cent of the population. They now equal more than 45 per cent, and by 1965 will total 99,000,000 and make up 52 per cent of the population. If all these people were entitled to veteran benefits, one half the population would be subsidizing the other half.

In addition, the argument goes, more and more training in the armed services has civilian value; there's less hazard in military service now than formerly; military pay is far better.

Despite their long-term impact, these proposals to tighten up wouldn't have much effect on the budget immediately, partly because the Administration would allow a time lag before any changeover, and partly because the tightening would be offset for the time being by benefit liberalizations such as a proposed higher pension figure; a proposed increase in compensation schedules for completely disabled, housebound veterans; and a proposed relaxation in pension eligibility standards for some widows of World War II and Korean veterans.

—THE WALL STREET JOURNAL, November 18, 1957, pp. 1, 4.

POLIO FOUNDATION WILL SUBSIDIZE BASIC RESEARCH

The National Foundation for Infantile Paralysis, on November 8, announced its intention of adding $1,000,000 to its research allocation for 1958, bringing its budget for that purpose to $4,700,000, and to use almost all of that added million in subsidizing basic research.

Continued or enlarged grants will finance studies of how viruses affix themselves to and invade cells, studies of the structure and function of nucleic acid (a key chemical found in all living things), studies of viruses recently discovered whose relationship to disease is still not wholly understood, studies of reasons why certain drugs inhibit virus growth and studies of the properties of cells which appear to have become malignant as they have been grown in laboratories.

In making this announcement, Mr. Basil O'Connor, president of the Foundation, declared that the expansion of the virus research allocation represents no change in the organization's policies, and pointed out that Dr. Jonas Salk's work had been based, in large part, on basic research conducted by Dr. John Enders with the Foundation's financial backing. "As our grantees have pursued their investigations on polio viruses and the disease they cause," Mr. O'Connor continued, "they and we have learned that there is no such thing as studying one disease or one virus. . . . It is now apparent that what happens when a virus invades a cell and makes it sick is similar in many ways to what happens when a cell becomes sick because of cancer. Nor is it necessarily different from what occurs in scores of other diseases."

In the remainder of his statement, Mr. O'Connor seemed to imply that his organization expects eventually to appeal to the public for funds to support biologic research generally, rather than to fight poliomyelitis. "We know it is possible," he said, "to raise money to fight polio or other specific diseases. . . . Have we reached the point where it is possible to make a broader approach? This is an important question: Will the public support non-governmentally sponsored basic research unconnected with a magic name like polio or cancer or heart disease? I think it will."

Woman's Auxiliary News

ANNUAL CONFERENCE OF COUNTY MEDICAL SOCIETY OFFICERS

The officers of the Auxiliary who attended the Annual Conference of County Medical Society Officers, in Des Moines on October 20, found it a very informative and stimulating meeting. I, for one, wish to thank the State Medical Society for this privilege. In representing our husbands, we could do no better than repeat to everyone we know the aim of the Iowa State Medical Society, as expressed by its president, Dr. Fred Sternagel, "to give the MOST people the BEST medical care at a cost that they can pay."

Concerning a public opinion survey that had been made by the Michigan State Medical Society, Mr. Hugh Brenneman, public relations counsel for that organization told us that Blue Shield subscribers in his state believed they were paying $5.96 per month for coverage and were willing to pay $6.95, though in fact they were paying only $2.83. Less than 50 per cent of them, he said, knew that they had coverage for emergency care in doctors' offices. Because of these findings, one of the conclusions that the Michigan Society reached was that more should be done to educate people regarding the provisions of their policies. Mr. Brenneman's report, only slightly abbreviated, was printed in the November issue of the JOURNAL OF THE IOWA STATE MEDICAL SOCIETY. Blue Shield matters constitute a phase of our husbands' practice about which we should take pains to inform ourselves, and reading Mr. Brenneman's report would be a good way to start.

Dr. Robert Hardin, chairman of the ISMS Committee on National Emergency Medical Service, outlined a well-planned program for Iowa. Our area will be a reception and sorting area for casulties and emergency medical services in case of a national or major regional disaster. We must plan for any disaster and be prepared for all emergencies.

As usual, the members of our state office staff and the chairmen of other ISMS committees gave us informative reports in their usual clear and concise manner.

JANE KING

OUR PRESIDENT SAYS—

Since the next issue of the BULLETIN will carry full details of the 14th Annual Conference of Presidents, Presidents-Elect and National Committee Chairmen, my comments on that meeting will be brief. I do want to tell you, however, that it was an excellent gathering.

The Conference emphasized group relationship and was arranged in small groups to which conference members were assigned. Thus, they had an opportunity to discuss with each other the work of the Auxiliary and the methods by which we, as officers, may be of more benefit to our members.

The Conference was built around ideas for the future. We were urged to reflect upon the effectiveness of our own programs. Are we attracting new members? Are we doing all we can for the AMEF, for safety, for mental health, for civil defense, for TODAY'S HEALTH and for the promotion of AMA legislative aims? This approach may be a good one for you, too, as you lay plans for making your new year a truly successful one.

We were fortunate to have with us Dr. Martin P. Chworowsky, who is director of the Albert M. Greenfield Center for Human Relations at the University of Pennsylvania. He reminded us that we learn from an organization in direct proportion to the contribution we make to it. This is something for all of us to bear in mind.

Both Dr. David B. Allman, president of the AMA, and Dr. Ernest B. Howard, its assistant secretary, gave the women many things to think about and to take back to their organizations.

Now it is my personal pleasure to wish each of you a very happy Christmas. May you enjoy in its deepest sense the peace and good will of the first Christmas message. And may the New Year bring fulfillment of your noblest purposes, which is the only sure means to happiness!

SUE GERKEN

STATE-WIDE HEALTH COMMITTEE

Mrs. Samuel P. Leinbach, of Belmond, and Mrs. Dean H. King, of Spencer, were two of the 35 members who attended the first board meeting of the newly organized State-Wide Health Com-

mittee, at the State Office Building in Des Moines on October 18. The group is sponsored by the Iowa Public Health Association, and Dr. Franklin H. Top, of Iowa City, president of that organization, presided.

The Committee includes representatives of schools, professions, safety councils, student health services and health and youth organizations, and it will consider 24 important health problems in Iowa. Before determining its policies and the programs that it will undertake, it will spend approximately a year in studying the needs of the state and local areas, as well as the accomplishments of all state and local health agencies.

TRAFFIC

Traffic is more than a problem. It has become a national emergency. Unplanned, uncontrolled and badly supervised traffic already is resulting in thousands of deaths and over a million injuries annually. It is resulting in a waste of billions of dollars that should be helping to provide us with health, education, housing and defense.

Traffic volume is growing rapidly. It has doubled in the past 10 years, and we have difficulty in visualizing how great it will be when, in 1965, there are 81 million or, in 1975, 95 million cars registered in the United States.

The solution to this emergency is within our reach. In many places it has already been spectacularly successful. It calls for a program of planned official action combined with strong public support. The press can render strong assistance.

The key to the success of the program is a careful analysis of the causes of accidents and a system of careful accident investigation so that the who, where, when and why of accidents can be determined.

WHAT IS IN IT FOR US?

Generally speaking, we seek to prevent accidents for the same reasons that we seek to wipe out disease. Now, suppose in an American community as many as two people died and 70 became seriously ill as a result of a polluted water supply. How long do you think it would take for the citizens of that town to get action? My hunch is that action would start as soon as the story broke.

Now, look at traffic deaths. Two traffic fatalities occur each year in each of many small cities, and the national averages show that there are about 70 non-fatal injuries for each two traffic deaths. What happens in those communities? Are funds voted to assure the construction of streets that will be adequate even for present traffic volume? Do we make sure that we have adequate numbers of traffic policemen, and that they are well trained and supervised? Do we make sure that every eligible youth has an opportunity to enroll in an approved high school driver-training course? Do we insist on periodic vehicle inspection? Do we insist that drivers be reexamined and required to demonstrate fitness and competence before their operators' licenses are renewed? Does each of us obey the traffic laws?

WHAT CAN I DO?

The logical next question is "What can I do?" Each community has its own problems, but concentrated support of the Action Program is our best hope of improving our traffic problems.

I hope the Action Program is familiar to all of you. It began with the President's Conference in 1946 and has continued through many types of meetings, the most recent of which was the Seminar on Traffic Safety conducted by the Traffic Institute of Northwestern University. Today, the Action Program embraces seven broad fields: accident records, education, enforcement (both by police and courts), engineering, laws and ordinances, motor-vehicle administration and organized public support.

If this program is so good, why hasn't our accident rate diminished? If we can point the finger of blame, we must point it at ourselves—at you and me and the rest of us. Public complacency, yours and mine, is the root of our present-day traffic-safety crisis!

It took the automobile 50 years to get us into this mess, and we aren't going to get out of it over night. In a democracy, public opinion is everything. Therefore, if we can mobilize sufficient public support, this problem, like many others that preceded it, can be solved. It is up to each of us to accept the challenge!

FRANCES HINES
Co-chairman, Safety Committee

COUNTY AUXILIARIES

Boone

The Woman's Auxiliary to the Boone County Medical Society entertained on October 3 at its annual tea for the girls from junior and senior high schools who are interested in nurses' education. The 50 girls who were present represented high schools at Ogden, Pilot Mound, Sacred Heart and Boone. The speakers were Miss Caryl Achenbach, a second-year student at Immanuel Lutheran Hospital, Omaha, Miss Barbara Long, a second-year student at Iowa-Methodist Hospital, Des Moines, and Miss Nancy Jo Smith, a graduate nurse at Boone County Hospital. Mrs. E. E. Linder, of Ogden, the program chairman, introduced

the speakers; Mrs. Robert Manderscheid served as general chairman of arrangements; and other committees were headed by Mrs. A. W. Puntenney, Mrs. W. G. Dennert, Mrs. T. E. Kane and Mrs. John M. Wall.

Clay

The requests for materials at the Careers Booth at the Clay County Fair were quite numerous. Thirty-four girls from 11 to 18 years of age requested information on nursing. Six girls of ages 15 to 17 asked for materials on medical technology. Three, 16 or 17 years of age, asked for materials on practical nursing. There were two out-of-state requests, one of them from Nebraska and the other from Texas.

Films on traffic and farm safety, on prevention of home accidents, on civil defense and on health careers were shown daily, and sample copies of TODAY'S HEALTH and other health literature were distributed.

Mrs. King addressed the Northwest Conference of School Nurses, in Cherokee on Thursday, October 17, on the activities of Future Nurse clubs. She represents the Clay County Auxiliary this year as sponsor of the Club at the Spencer High School.

Polk

The Polk County Medical Auxiliary met for luncheon at the Standard Club, in Des Moines, on November 8. The program was entitled "Your Dollars and Sense," and hostesses for the meeting were Mesdames George White, J. Fred Throckmorton and Jesse H. McNamee.

Woodbury

At the Woodbury County Auxiliary's annual Handicraft Sale, at Younkers' store in Sioux City on November 7-9, Mrs. John F. Kelly was general chairman and Mesdames Carroll A. Brown, Paul Osincup, William Davey, Charles Ryan, Dwayne Howard and Anthony Kelly assisted.

CIVIL DEFENSE MEANS CONSTANT DEVOTION

CD—CONSTANT DEVOTION. Every wife in America stands pat on her prime duties—constant devotion to family, home and church. Protection of her family and concern for its welfare is an inborn trait that has become highly developed in almost all females in the animal world, and no less so among human beings.

CONSTANT DEVOTION and CIVIL DEFENSE are synonymous. We must be prepared to protect our families, homes and churches from local and national disasters such as fires, floods, tornadoes, bus, train and plane accidents, and enemy attacks. Let's begin today!

HOME PROTECTION

Include the whole family in your planning:

1. Know where to shut off your gas, water and electricity. Post instructions in several places about your house.
2. Prepare a Grandma's Pantry for emergency food storage.
3. Prepare a First Aid kit.
4. Prepare an emergency car kit that can remain in each of your cars.
5. Mark the emergency (CONELRAD) numbers, 640 and 1240, on the dial of each of your radios.

COMMUNITY PROTECTION

Know your community's CD plans, and use your skills where they will count the most.

1. Join a home nursing course in your local Red Cross.
2. Join the Civil Air Patrol.
3. If you are professionally trained, ask your CD chairman to place you where you will be of most value.
4. Ask for a job and do your part. Teach by example.

There are organized Auxiliaries in 38 counties, but only 12 counties have civil defense chairmen. Please appoint one in your county, and report her name to me.

We are proud of our 98 members-at-large. I hope that each of them will consent to be a civil defense chairman in her area.

As your civil defense materials come to you, please read them and make the best use possible of them.

Remember that by being prepared you are protecting your family and yourself!

I wish you all the blessings of the holiday season, and as the spirit of the Christmas season enters your homes, I pray your families will feel your deep love and devotion to them through your efforts to make their daily lives safer in a blessed and still free world.

JANE KING

WOMAN'S AUXILIARY TO THE IOWA STATE MEDICAL SOCIETY

President—Mrs. J. F. Gerken, Waterloo
President-Elect—Mrs. H. C. Merillat, 2800 Woodland Avenue, Des Moines 12
Secretary—Mrs. Wm. C. Shinkle, 907-49th St., Des Moines
Treasurer—Mrs. E. A. Vorisek, 6205 Woodland Rd., Des Moines 12
Editor of THE NEWS—Mrs. E. T. Burke, 601 S.W. 42nd Street, Des Moines 12
Asst. Editor of THE NEWS—Mrs. D. F. Crowley, Jr., 663 44th Street, Des Moines 12

TUMOR CONFERENCE AT S.U.I.

Following is the program for the Postgraduate Tumor Conference to be held at the S.U.I. College of Medicine, in Iowa City, on December 11-12, under the joint sponsorship of the College and the Iowa Division of the American Cancer Society:

Wednesday, December 11

9:30 CASE PRESENTATION (DRY CLINIC): Cancer metastases—vertebral venous system; Irregular vaginal bleeding at menopause; Gastric ulcer adjacent to the esophagus; Patient with a nasal pharyngeal mass; Prostatic cancer; etc.—Drs. R. H. Flocks, J. A. Gius, D. M. Lierle, L. T. Palumbo, R. T. Tidrick, J. H. Randall and E. S. Brintnall

11:30 OPEN FORUM: Continuation of discussion; Presentation of problem cases by visiting physicians is invited

1:00 "The Aggressive Treatment of Colonic Adenomatous Polypi"—Dr. W. D. Holden, professor and director, Department of Surgery, Western Reserve University, Cleveland

1:30 "The Management of the Pregnant Patient With an Associated Uterine Cervical Cancer"—Dr. H. E. Schmitz, professor and chairman, Department of Obstetrics & Gynecology, Loyola University, Chicago

2:00 "The Use of Supervoltage Therapy in the Treatment of Intrathoracic Cancer"—Dr. J. W. Carpender, professor of radiology, University of Chicago

2:40 "Radical Amputation of the Extremities for Cancer"—Dr. L. T. Palumbo

3:10 "The Injured Ureter—Its Management"—Dr. D. Culp

4:00 MEDICAL SURGICAL CONFERENCE: Cancer of the cervix—management of various stages of disease (Closed-circuit television to room E-405). *Panel Moderator:* Dr. S. E. Ziffren. *Panel:* Drs. Schmitz, Carpender, H. B. Elkins and W. C. Keettel

6:00 Social hour at Hotel Jefferson, by courtesy of the Picker Mid-West X-ray Corporation

6:45 Dinner at Hotel Jefferson. "Random Thoughts on Our Foreign Policy and Foreign Service"—Mr. John D. Healy, executive director, Iowa Division, American Cancer Society, formerly with the United States State Department.

Thursday, December 12

9:00 "The Resection of Intrapulmonary Metastases—Its Role in Therapy"—Dr. J. L. Ehrenhaft

9:30 "The Diagnostic Use of Supraclavicular Scaline Fat Pad Biopsy"—Dr. S. H. Walker

10:00 "Analysis of 100 Neck Dissections for Metastatic Cancer"—Dr. G. Obregon

10:45 "The Value of Supervoltage Radiation Therapy in Metastatic Disease"—Dr. Carpender

11:15 "Management of Pain in the Patient with Advanced Visceral Cancer"—Dr. G. E. Perret

1:00 THYROID CLINIC: Representative patient presentation—solitary nodule; cancer; juvenile patient; thyroiditis; etc. *Thyroid Clinic group:* Drs. E. L. DeGowin, J. A. Buckwalter, E. E. Mason, H. B. Elkins, T. C. Evans, H. E. Hamilton and R. E. Hodges

2:30 "Physiologic Alterations in the Patient Undergoing Surgical Cancer Therapy"—Dr. Holden

3:00 "Mechanism of Anemia in the Cancer Patient"—Dr. R. F. Sheets

3:45 MOVIE: "Ovarian Tumors"—Prepared and narrated by Dr. Schmitz.

PRE-STERILIZED MEDICAL AND SURGICAL EQUIPMENT

A leading British bacteriologist urges physicians everywhere to make use of pre-sterilized medical and surgical equipment. He is Dr. Lawrence P. Garrod, professor of bacteriology at St. Bartholomew's Hospital, London, and editor of the BRITISH JOURNAL OF EXPERIMENTAL PATHOLOGY.

In opening a series of lectures on sterilization technics at Seton Hall College of Medicine and Dentistry, in Jersey City, he said, "In the larger centers of my country it is possible to obtain sterile parenteral solutions and sterilized outfits containing towels, gowns and dressings for surgery. I understand that here you have gone further and that pre-sterilized materials including, for instance, disposable syringes are now extensively used. I commend this development strongly."

"The manufacturer, working on a large scale and under perfect conditions, is more certain to do the job of sterilizing properly than any user, and reliance on such materials should remove a serious risk from the practice of both surgery and medicine," Dr. Garrod declared.

Reporting on "some difficult things to sterilize," he cited the marine sponge. "Either autoclaving or formalin will harden and spoil it, while the traditional sterilization method used in England leaves a profuse growth of sporogenous bacilli." The answer, he thinks, may be ethylene oxide. Rather than the usual formaldehyde gas, he suggests that ethylene oxide might also be used in the sterilization of catheters. Admitting it to a chamber from which the air had been pumped would insure that the gas would penetrate the catheter thoroughly.

Dr. Garrod scored the practice of storing sterile materials in germicidal solutions "simply to prevent their recontamination." The germicide may leak through a crack into products such as ampules, he warned, leading to disastrous results. When once an object has been sterilized, it need only be placed in a dust-tight container and it will remain sterile indefinitely.

Plan to Attend the 1958

ISMS Annual Meeting

Veterans Memorial Auditorium

Des Moines, April 20-23

STATE DEPARTMENT OF HEALTH

COMMISSIONER

MORBIDITY REPORT FOR MONTH OF OCTOBER

Disease	1957 Oct.	1957 Sept.	1956 Oct.	Most Cases Reported From These Counties
Diphtheria	0	0	0	
Scarlet fever	218	52	45	Johnson, Polk
Typhoid fever	4	2	2	Benton, Linn, Osceola, Tama
Smallpox	0	0	0	
Measles	31	24	158	Polk
Whooping Cough	13	21	55	Des Moines
Brucellosis	7	12	25	One to a county
Chickenpox	159	29	119	Clay, Story, Warren
Meningococcus Meningitis	2	0	0	Polk
Mumps	145	69	73	Dallas, Polk
Poliomyelitis	4	32	61	Black Hawk, Guthrie, Plymouth, Warren
Infectious Hepatitis	5	7	13	Polk
Rabies in Animals	10	11	18	One to a county
Malaria	0	1	0	
Psittacosis	0	0	1	
Q fever	0	0	0	
Tuberculosis	38	16	36	For the state
Syphilis	92	103	248	For the state
Gonorrhea	33	69	40	For the state
Histoplasmosis	0	0	2	
Food Intoxication	0	17	0	
Meningitis (type unspecified)	6	11	3	Polk
Diphtheria Carrier	0	0	0	
Aseptic Meningitis	6	4	0	Polk
Salmonellosis	16	4	0	Polk, Johnson
Tetanus	0	1	0	
Chancroid	0	0	0	
Encephalitis (type unspecified)	0	0	2	
Influenzal Meningitis	0	0	0	
Amebiasis	4	1	2	Cerro Gordo
Shigellosis	0	3	4	
Influenza	73,019	564	63	

LAKESIDE LABS OFFERS HELPFUL BOOK

CLINICAL NORMS, a 27-page pamphlet containing hundreds of facts used in evaluating laboratory tests and in making clinical diagnoses is being made available free to medical school deans and instructors of clinical nursing. It will be revised periodically, as investigators develop new technics and establish new values.

Several pages are devoted to blood, including characteristics, elements and constituents. Data on hormones and vitamins are also given. Other sections deal with liver function, urine, kidney function, the gastrointestinal tract, the respiratory system, the nervous system, the endocrine system and the reproductive system. Pediatrics and genetics are covered in two other sections. Values for certain electrolytes are expressed in terms of both milligrams and milliequivalents.

LABORATORIES WILL DIAGNOSE ASIAN FLU

The State Hygienic Laboratory and the S.U.I. Institute of Agricultural Medicine are now equipped to diagnose cases of Asian influenza. Dispensing and collecting stations have been designated at eight places throughout the state, and physicians can secure throat-washing materials from them without charge. The addresses are: (1) C. R. Phelps, M.D., Physicians' Clinical Laboratories, 1258 North Elm Street, Ottumwa; (2) Robert G. Vernon, M.D., Finley Hospital, Dubuque; (3) Charles P. McHugh, M.D., Health Officer, City of Sioux City; (4) Robert E. Joranson, M.D., The Council Bluffs Clinic, 532 First Avenue, Council Bluffs; (5) James F. Speers, M.D., Director, Des Moines-Polk County Health Department, Des Moines 9; (6) Kenneth J. Goldsberry, Des Moines County Health Center, 522 North Third Street, Burlington; (7) George T. Joyce, M.D., St. Joseph Mercy Hospital, Mason City; and (8) State Hygienic Laboratory, Medical Laboratories Building, Iowa City. Instructions for taking and shipping the specimens will accompany the throat-washing materials.

It is recommended that specimens submitted for diagnosis be taken while patients are in the acute phase of the illness, preferably within 72 hours of its onset.

The Laboratory is primarily interested in diagnosing epidemics that may occur in Iowa, and the work is being carried out in conjunction with USPHS and the World Health Organization (WHO). The selection of a group of 12 cases in a community, the WHO epidemiologists think, will provide a means of diagnosing an epidemic.

This does not mean that individual specimens submitted by practicing physicians will not be accepted. It means simply that specimens from areas where an epidemic is suspected will receive priority. All specimens properly sent to the Laboratory will be examined as expeditiously as possible. This surveillance is deemed necessary to determine any change in type of virus as expected epidemics progress.

IMMUNIZATIONS FOR OVERSEAS TRAVEL

Since the State Department of Health frequently receives requests for information regarding immunizations for travel abroad, we present the following summary from the most recent bulletin on the subject prepared by the Office of International Health.

The local physician can do any of the immunizations, except on the one for yellow fever which, because of the great difficulty in maintaining a potent vaccine, is given only at the port of embarkation, at a U. S. Marine hospital or at other stations operating under special supervision. To serve persons in this area, a yellow fever vaccination center has been set up at Iowa City. This center, No. 81, the only one in Iowa, is at the S.U.I. Student Health Service, Children's Hospital. Dr. C. I. Miller is in charge. (See the accompanying table for the addresses of other yellow-fever immunization centers.)

INTERNATIONAL CERTIFICATES OF VACCINATION

International certificates of vaccination are usually received from the office to which the traveler makes application for his passport. Passport applications are made through the office of the Clerk of Federal Court or a State Court authorized by law to naturalize aliens. Information as to immunizations required for travel to any particular country can usually be obtained from the passport division of such a court.

SMALLPOX

Smallpox vaccination is recommended before travel to any foreign country. A valid certificate of such vaccination is always required for entry into the United States from countries other than Canada and a few other nearby lands. The certificate is valid for a period of three years beginning eight days after the date of a successful vaccination or on the date of revaccination. Observe and record the reaction on the third and ninth days. If yellow fever inoculations are to be given, they should be administered at least five days before smallpox vaccine is given.

CHOLERA

Start immunizations at least two or three weeks before the traveler is to leave the United States. The standard course consists of two injections at a 7-10 day interval. A third injection is advisable. The cholera vaccination certificate is valid for a period of six months, beginning six days after the first injection of the vaccine, or on the date of revaccination within such period of six months.

TYPHUS

Typhus inoculations should be started two or three weeks before the traveler is to leave the country. The standard course consists of two doses at a 7-10 day interval. Though the certificate is valid for one year, a booster dose is recommended at six months if the danger of typhus is still present.

YELLOW FEVER

One injection is required for yellow fever, and the traveler should get it at least 10 days before leaving the country. The certificate becomes valid on the eleventh day following the vaccination, and remains so for six years. Travelers who, within six days of their arrival, have come from or passed through an area that is considered in-

YELLOW FEVER IMMUNIZATION CENTERS IN THIS AREA*

City	*Address*	*Days*	*Telephone*
Chicago, Illinois	U. S. Public Health Service Hospital, 4141 Clarendon Ave.	Monday and Friday 9:45 a.m. (If Monday is a holiday, inoculations are given on Tuesday; if Friday is a holiday, no inoculations are given until the following Monday.)	LAkeview 5-6340
Iowa City, Iowa	State University of Iowa Student Health Service, Children's Hospital, Iowa City, Iowa	Wednesday 10:00-12:00 a.m. If Wednesday is a holiday, no inoculations are given until the following Wednesday	3-111 Ext. 247 Write or call for appointment as far in advance as possible.
A fee is charged to cover costs of vaccine.			
Minneapolis, Minnesota	Students' Health Service University of Minnesota	By appointment only	MAin 8158, Ext. 168
Kansas City, Missouri	Trans-World Airlines, Inc., 10 Richards Road (Airport)	Tuesday and Friday only, 8:00 a.m.-5:00 p.m. (except holidays.)	NOrclay 4400
St. Louis, Missouri	U. S. Public Health Service, Outpatient Clinic, Old Post Office Bldg., Room 206, 815 Olive Street	Thusday, 1:00 p.m.	

* The five stations listed above are the centers nearest Iowa. There are a total of about 90 yellow fever immunization centers in the United States. Many of these are located at marine hospitals and ports of embarkation. The Iowa State Department of Health can at any time furnish a complete list of these stations should the traveler find it inconvenient to obtain his required immunization at any of the stations named above.

fected with yellow fever, are required to present a valid certificate of vaccination against the disease.

TYPHOID AND PARATYPHOID

Every person traveling abroad should have protection against typhoid and paratyphoid. The standard course consists of three inoculations at at 7-10 day intervals. Annual boosters should be taken.

DIPHTHERIA

Children under 15 who go abroad should be immunized against diphtheria. For travel in some areas of high diphtheria incidence, adults up to the age of 35 should be immunized if their Schick tests are positive.

Because of the severity of reactions of older persons to the alum-precipitated materials, persons over 10 years of age should be given the purified diphtheria toxoid, and not the alum-precipitated toxoid.

STAMPS AND SEALS

Stamps and seals are required for smallpox and cholera vaccination certificates. After the physician's data have been entered, the certificates must be authenticated by any one of the following approved stamps or seals: (1) The stamp or seal of the state or local health department of the area in which the vaccinating physician practices; (2) The stamp approved by the USPHS and assigned to certain of its physicians; and (3) The impression seal of the USPHS or the stamp of the Department of Defense.

The yellow fever immunization entry must bear the stamp of the yellow fever immunization center giving the injection.

INTERNATIONAL CERTIFICATES OF VACCINATION

AS APPROVED BY

THE WORLD HEALTH ORGANIZATION

CERTIFICATS INTERNATIONAUX DE VACCINATION

APPROUVES PAR

L'ORGANISATION MONDIALE DE LA SANTE

TRAVELER'S NAME—Nom du voyageur

ADDRESS ADRESSE (Number—Numéro) (Street—Rue)

(City—Ville)

(County—Département) (State—État)

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

PUBLIC HEALTH SERVICE

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PHS 731
Rev. 1-57

This is the front cover of the International Certificate of Vaccination as revised in January, 1957. In a bulletin dated October 28, 1957, the U.S.P.H.S. said, "It is requested that only this revision of the certificate be distributed to the public and that any stock of the old certificate on hand be destroyed immediately." Thus, physicians are asked to make sure that each of the individuals whom they vaccinate has this certificate, rather than the old one.

END OF VOLUNTARY FLU VACCINE DISTRIBUTION

Following a conference with its influenza advisory committee, the U. S. Public Health Service terminated the voluntary interstate system for the distribution of influenza vaccine on November 11, 1957, with the explanation that the system was no longer necessary because supplies of the vaccine had become adequate to meet demand.

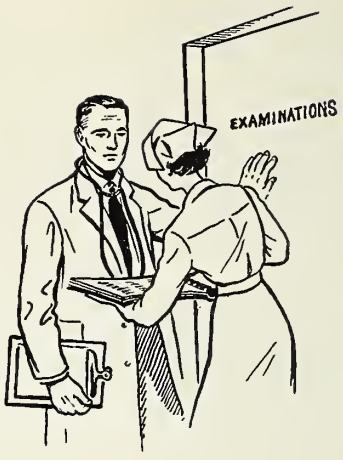
Influenza vaccine production is ahead of the anticipated production schedule. For example, it had been estimated in August that by February enough vaccine would be available through the voluntary interstate distribution system to immunize 30 per cent of Iowa's population. To date, enough has entered all states to immunize about 20 per cent of the total population. This increased output, together with decreased demands for the influenza vaccine, has made the interstate distribution system no longer necessary.

Following the advice of immunologists, epidemiologists and public health specialists, all influenza vaccine released after December 1 will have double potency. Vaccine currently released contains 200 CCA (chicken cell agglutination) units. Doubling the potency of the vaccine will bring the content up to 400 CCA units.

Epidemic influenza was first noted in Iowa this fall at Iowa City, among S.U.I. students during pre-registration campus activities. Subsequently, it appeared in all other parts of the state. Following are estimates of Iowa cases week-by-week, to date, November 2:

September 28	445
October 5	1,610
October 12	4,602
October 19	21,038
October 26	45,770
November 2	73,376

THE DOCTOR'S BUSINESS



Who Should Use Accelerated Depreciation?

HOWARD D. BAKER
WATERLOO

WITH THE END of the year now in sight, we are faced with many tax-planning problems. One of the facets of taxation most discussed but least understood is depreciation.

In general, depreciation allowances exempt one from taxation and thus permit him to recover, over a specified period of time, the cost of assets used in a trade, business or profession. The regulations of the Bureau of Internal Revenue permit one to chose among three plans, and the table at the foot of this page shows how each would work for a piece of equipment costing $5,000 and having an expected useful lifetime of five years.

Human nature and an instinctive dislike for taxation lead many of us to "take all that the law allows," with complete disregard for future consequences. Thus, we choose the "Declining Balance" system, which permits the largest immediate allowance. But it may not be wise for all of us to take either that option or the other accelerated depreciation.

One must analyze his individual situation in order to decide which method is logically best for himself.

In most situations where there is a steadily rising investment in depreciable assets, accelerated depreciation is advantageous. Old equipment will be written off quickly, and reserves will be accumulated for new capital investments.

But the opposite is true if annual capital investment in depreciable assets is declining. Consideration must also be given to whether one expects that his income will rise during the life of the depreciable asset. If income can be expected to increase or remain constant over the period, there will be no advantage in accelerating the depreciation, since the greater tax exemption would have been claimed while the taxpayer was in a relatively low income tax bracket. On the other hand, if his income is likely to decrease over the life of the depreciable property, it will be to his advantage to elect one of the allowed methods of acceleration.

Another important consideration involves the individual's age and the number of years over which the asset is to be depreciated. If a doctor past 45 years of age has purchased a building with an anticipated usefulness of 33 to 50 years, he should certainly consider accelerating the depreciation. Even by so doing, it is unlikely that he will be able to recover its full cost.

If one makes a profit in selling a building, that part of the gain attributable to accelerated depreciation is a capital gain, and only 50 per cent taxable.

After considering your situation, if you conclude that you need to recover capital for immediate reinvestment, if you expect your income to show a downward trend over the life of the asset, or if the asset must be depreciated over so many years that you can't recover its cost by straightline depreciation, it will probably be to your advantage to adopt one of the methods of acceleration currently allowed. It must be remembered, however, that depreciation is a recovery of cost, and that any acceleration in early years will be offset by reduced depreciation in later ones.

ASSET COSTING $5,000—USEFUL LIFE 5 YEARS

Year	*Straight Line*		*Declining Balance*		*Sum of the Digits*	
	ANNUAL DEDUCTION	AMOUNT RECOVERED	ANNUAL DEDUCTION	AMOUNT RECOVERED	ANNUAL DEDUCTION	AMOUNT RECOVERED
1	$1,000	$1,000	$2,000	$2,000	$1,667	$1,667
2	1,000	2,000	1,200	1,200	1,333	3,000
3	1,000	3,000	720	3,920	1,000	4,000
4	1,000	4,000	432	4,352	667	4,667
5	1,000	5,000	259	4,611	333	5,000

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of the

Iowa State Medical Society

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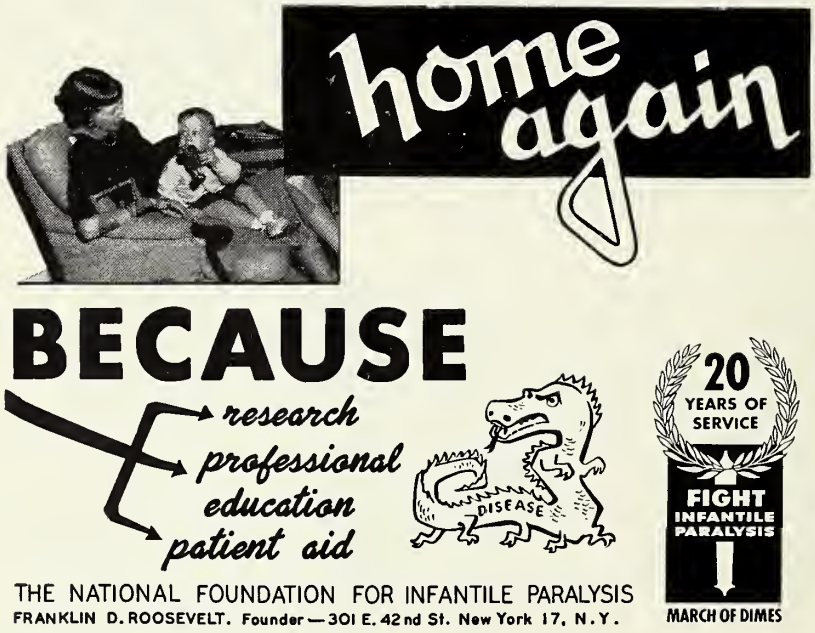
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